ORDER NO.MKE0307105C1

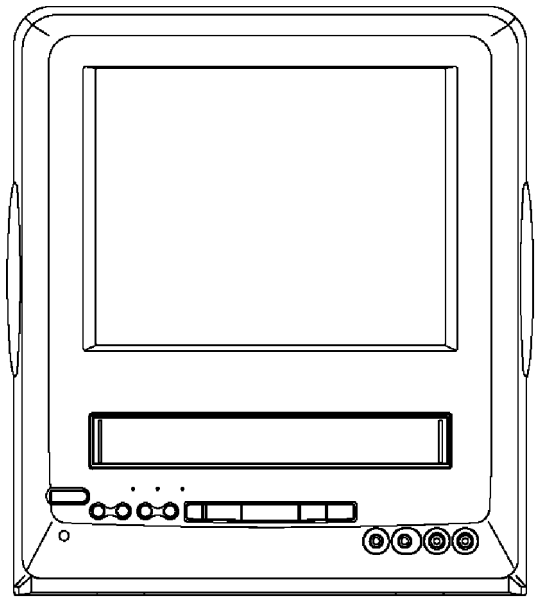
B22

Service Manual

COLOR TELEVISION RECEIVER/ VIDEO CASSETTE RECORDER

PV-C923

ORIGINAL MFR'S VERSION A



Panasonic®

1. IMPORTANT SERVICE SAFETY INFORMATION

Operating the receiver outside of its cabinet or with its back removed involves a shock hazard. Work on these models should only be performed by those who are thoroughly familiar with precautions necessary when working on high voltage equipment.

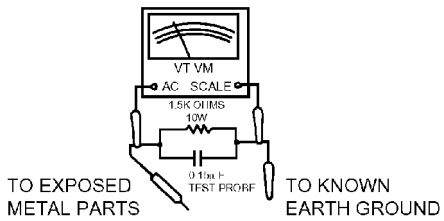
Exercise care when servicing this chassis with power applied. Many B plus and high voltage RF

terminals are exposed which, if carelessly contacted, can cause serious shock or result in damage to the chassis.
Maintain interconnecting ground lead connections between chassis, escutcheon, picture tube dag and tuner cluster when operating the chassis.
These receivers have a "polarized" AC line cord. The AC plug is designed to fit into standard AC outlets in one direction only. The wide blade connects to the "ground side" and the narrow blade connects to the "hot side" of the AC line. This assures thatthe TV receiver is properly grounded to the house wiring. If an extension cord must be used, make sure it is of the "polarized" type.
Since the chassis of this receiver is connected to one side of the AC supply during operation, service should not be attempted by anyone not familiar with the precautions necessary when working on these types of equipment.
When it is necessary to make measurements or tests with AC power applied to the receiver chassis, an Isolation Transformer must be used as a safety precaution and to prevent possible damage to transistors. The Isolation Transformer should be connectedbetween the TV line cord plug and the AC power outlet.
Certain HV failures can increase X-ray radiation.Receivers should not be operated with HV levels exceeding the specified rating for their chassis type. The maximum operating HV specified for the chassis used in these receivers is 22kV±1.0kVat zero beam current with a line voltage of 120V AC. Higher voltage may also increase the possibility of failure in the HV supply.
It is important to maintain specified values of all components in the horizontal and high voltage circuits and anywhere else in the receiver that could cause a rise in high voltage, or operating supply voltages. No changes should be made to theoriginal design of the receiver.
Components shown in the shaded areas on the schematic diagram and/or identified by ⚠ in the replacement parts list should be replaced only with exact factory recommended replacement parts. The use of unauthorized substitute partsmay create shock, fire, X-ray radiation, or other hazards.
To determine the presence of high voltage, use an accurate high impedance HV meter connected between the second anode lead and the CRT dag grounding device. When servicing the High Voltage System, remove static charges from it by connecting a 10kohm resistor in series with an insulated wire (such as a test probe) between the picture tube dag and 2nd anode lead (have AC line cord disconnected from AC supply).
The picture tube used in this receiver employs integral implosion protection. Replace with a tube of the same type number for continued safety. Do not lift picture tube by the neck. Handle the picture tube only when wearing shatterproof gogglesand after discharging the high voltage completely. Keep others without shatterproof goggles away.
When removing springs or spring mounted parts from the tuner, tuner cluster or chassis, shatterproof goggles must be worn. Keep others without shatterproof goggles away.
Before returning the receiver to the user, perform the following safety checks:

1. **Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.**
2. **Replace all protective devices such as nonmetallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks, mechanical insulators, etc.**
3. **To be sure that no shock hazard exists, a check for the presence**

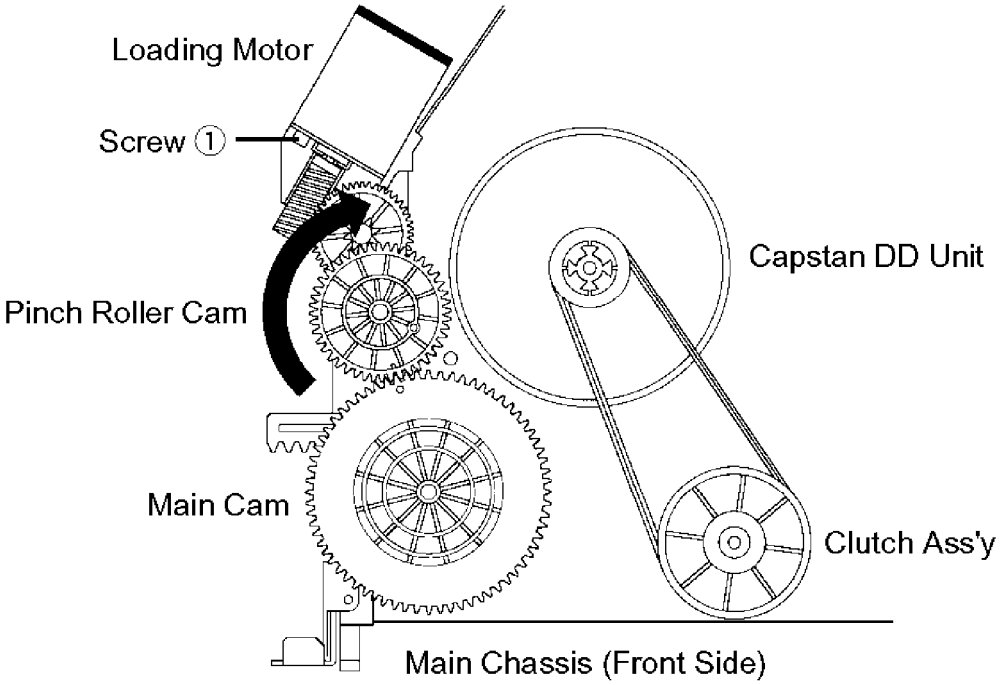
of leakage current should be made at each exposed metal part having a return path to the chassis (antenna, cabinet metal, screw heads, knobs and/or shafts, escutcheon,etc.) in the following manner.

Plug the AC line cord directly into a 120V AC receptacle.
(Do not use an Isolation Transformer during these checks.) All checks must be repeated with the AC line cord plug connection reversed. (If necessary, a nonpolarized adapter plug must be used only for the purpose of completing these checks.)
If available, measure current using an accurate leakage current tester. Any reading of 0.35mA or more is excessive and indicates a potential shock hazard which must be corrected before returning the receiver to the owner.
If a reliable leakage current tester is not available, this alternate method of measurement should be used.Using two clip leads, connect a 1500 ohm, 10 watt resistor paralleled by a 0.15 μ F capacitor in series with a known earth ground,such as a water pipe or conduit and the metal part to be checked. Use a VTVM orVOM with 1000 ohms per volt, or higher, sensitivity to measure this AC voltage drop across the resistor. Any reading of 0.35 volt RMS or more is excessive and indicatesa potential shock hazard which must be corrected before returning the receiver to the owner.



2. TAPE REMOVAL METHOD AT NO POWER SUPPLY

1. **Remove the VCR block from the main unit.**
   (Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)
2. **Remove the screw ① of the Deck Chassis and remove the Loading Motor.**
3. **Rotate the Pinch Roller Cam in the direction of the arrow by hand to slacken the Video Tape.**
4. **Rotate the Clutch Ass'y either of the derections to wind the Video Tape in the Cassette Case.**
5. **Repeat the above step 3~4. Then take out the Video Cassette from the Deck Chassis. Be careful not to scratch on the tape.**



3. GENERAL SPECIFICATIONS

4. ABOUT LEAD FREE SOLDER (PbF)

Distinction of PbF PCB:
PCBs (manufactured) using lead free solder will have a PbF stamp or printing on the PCB. (Please refer to figures.)

Printed case

Stamped case

Caution:

- Pb free solder has a higher melting point than standard solder;
Typically the melting point is 50°F~70°F (30°C~40°C) higher.
Please use a soldering iron with temperature control and adjust it to 700°F ± 20°F (370°C ± 10°C).
In case of using high temperature soldering iron, please be carefull

not to heat too long.

- Pb free solder will tend to splash when heated too high (about 1100°F/ 600°C).
- All products with the printed circuit board with PbF stamp or printing must be serviced with lead free solder.
  When soldering or unsoldering, completely remove all of the solder from the pins or solder area, and be sure to heat the soldering points with the lead free solder until it melts sufficiently.

Recommendations
Recommended lead free solder composition is Sn96.5 Ag3.0 Cu0.5.

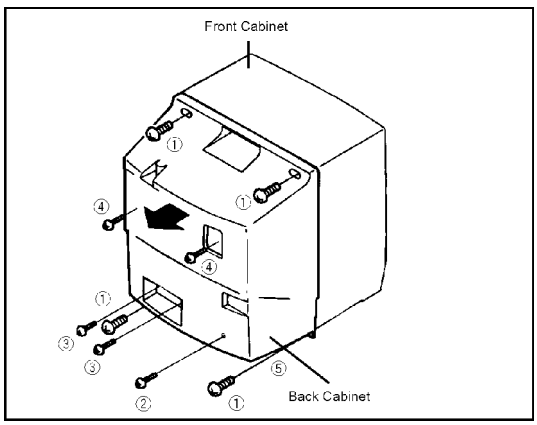
5. DISASSEMBLY INSTRUCTIONS

5.1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

5.1.1. BACK CABINET (Refer to Fig. 1-1)

1. Remove the 4 screws ①.
2. Remove the screw ②.
3. Remove the 2 screws ③.
4. Remove the 2 screws ④ which are used for holding the Back Cabinet.
5. Remove the AC cord from the AC cord hook ⑤.
6. Remove the Back Cabinet in the direction of arrow.

Fig. 1-1



5.1.2. CRT PCB (Refer to Fig. 1-2)

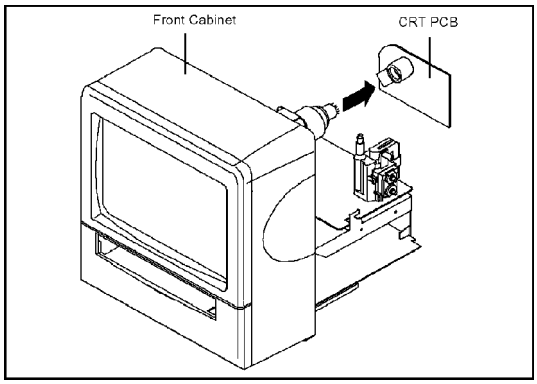
CAUTION:

BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY

BECAUSE IT CONTAINS HIGH VOLTAGE.
BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE AC SOURCE.

1. **Remove the Anode Cap.**
   (Refer to REMOVAL OF ANODE CAP)
2. **Disconnect the following connectors:**
   (CP801 and CP850).
3. **Remove the CRT PCB in the direction of arrow.**

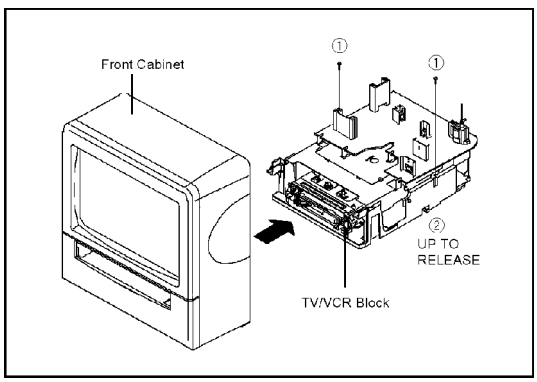
Fig. 1-2



5.1.3. TV/VCR BLOCK (Refer to Fig. 1-3)

1. **Remove the 2 screws ①.**
2. **Disconnect the following connectors:**
   (CP353, CP401 and CP403).
3. **Unlock the support ②.**
4. **Remove the TV/VCR Block in the direction of arrow.**

Fig. 1-3

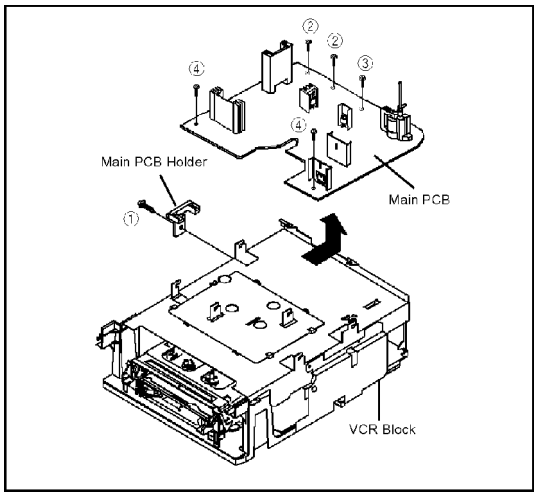


5.1.4. MAIN PCB (Refer to Fig. 1-4)

1. **Remove the screw ①.**

2. Remove the Main PCB Holder.
3. Remove the 2 screws ②.
4. Remove the screw ③.
5. Remove the 2 screws ④.
6. Disconnect the following connectors:
   (CP502 and CP820).
7. Remove the Main PCB in the direction of arrow.

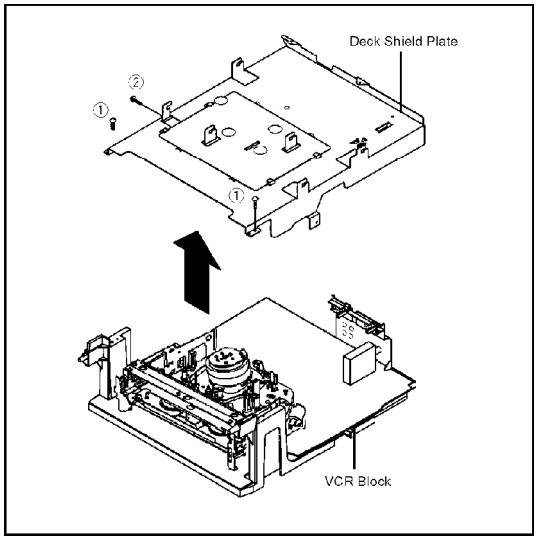
Fig. 1-4



5.1.5. DECK SHIELD PLATE (Refer to Fig. 1-5)

1. Remove the 2 screws ①.
2. Remove the screw ②.
3. Remove the Deck Shield Plate in the direction of arrow.

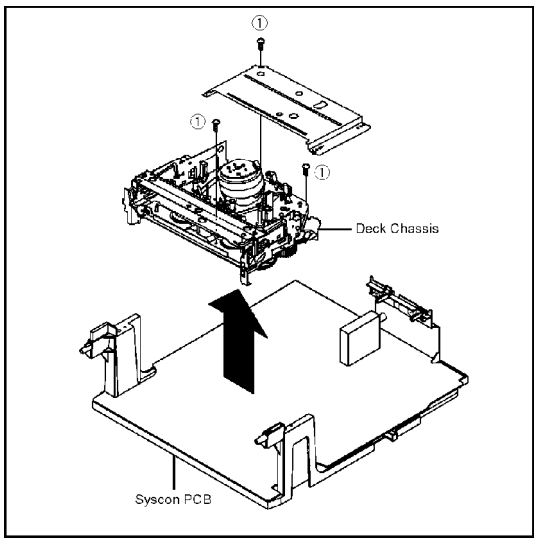
Fig. 1-5



5.1.6. DECK CHASSIS (Refer to Fig. 1-6)

1. Remove the 3 screws ①.
2. Disconnect the following connectors:
   (CP1001, CP1002, CP4001, CP4002 and CP4003).
3. Remove the Deck Chassis and Shield Cover Deck in the direction of arrow.

Fig. 1-6

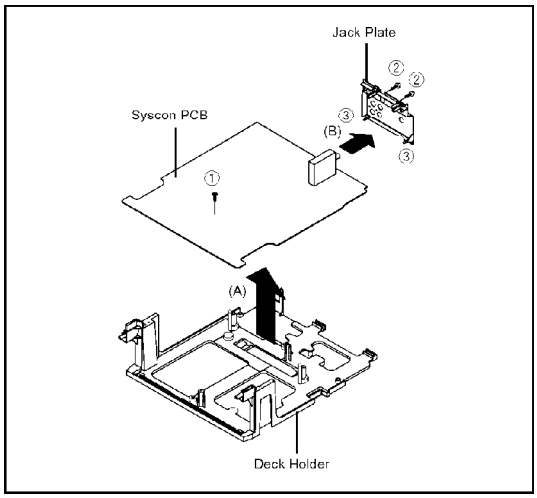


5.1.7. JACK PLATE AND SYSCON PCB (Refer to Fig. 1-7)

1. Remove the screw ①.
2. Remove the Syscon PCB in the direction of arrow (A).
3. Remove the 2 screws ②.
4. Unlock the 2 supports ③.

5. Remove the Jack Plate in the direction of arrow (B).

Fig. 1-7



5.2. REMOVAL OF DECK PARTS

5.2.1. TOP BRACKET (Refer to Fig. 2-1)

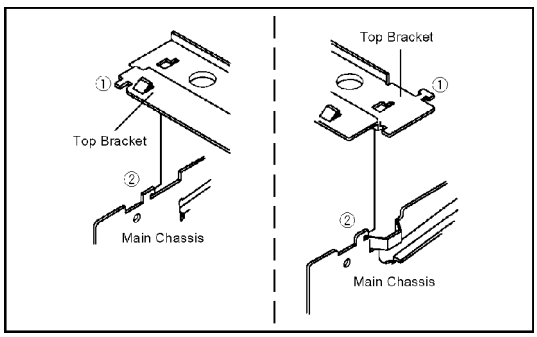
1. Extend the 2 supports ①.

2. Slide the 2 supports ② and remove the Top Bracket.

NOTE

1. After the installation of the Top Bracket, bend the support ① so that the Top Bracket is fixed.

Fig. 2-1



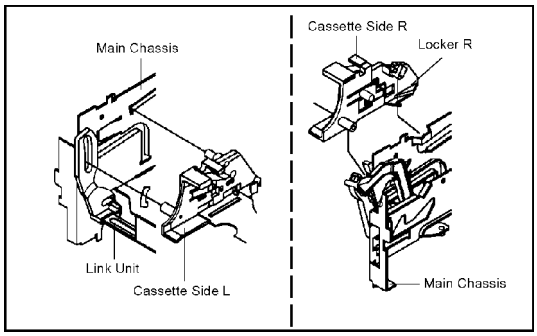
5.2.2. CASSETTE HOLDER ASS'Y (Refer to Fig. 2-2)

1. Move the Cassette Holder Ass'y to the front side.

2. Push the Locker R to remove the Cassette Side R.

3. Remove the Cassette Side L.

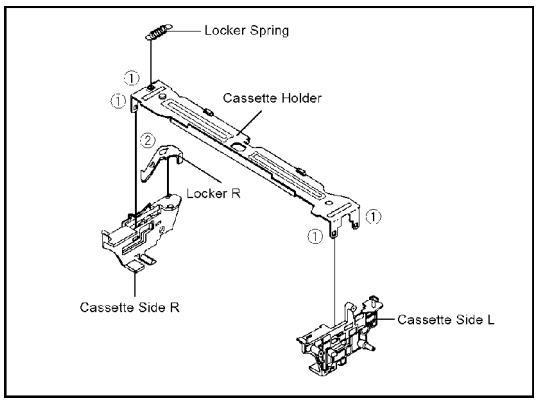
Fig. 2-2



5.2.3. CASSETTE SIDE L/R (Refer to Fig. 2-3-A)

1. Remove the Locker Spring.
2. Unlock the 4 supports ① and then remove the Cassette Side L/R.
3. Unlock the support ② and then remove the Locker R.

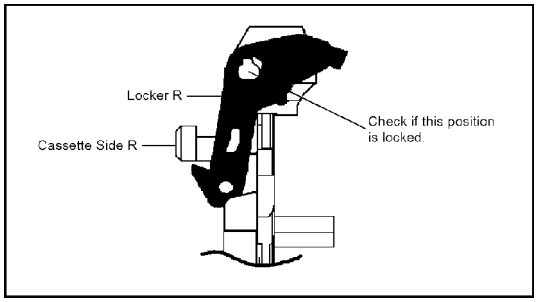
Fig. 2-3-A



NOTE

1. In case of the Locker R installation, check if the one position of Fig. 2-3-B are correctly locked.
2. When you install the Cassette Side R, be sure to move the Locker R after installing.

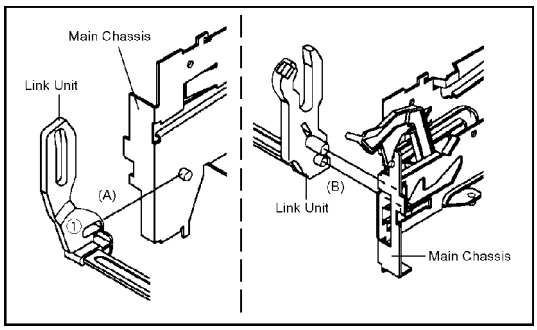
Fig. 2-3-B



5.2.4. LINK UNIT (Refer to Fig. 2-4)

1. Set the Link Unit to the Eject position.
2. Unlock the support ① .
3. Remove the (A) side of the Link Unit first, then remove the (B) side.

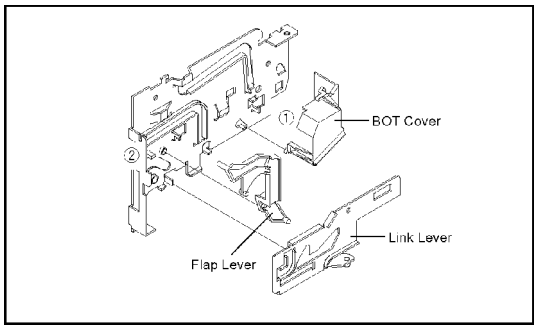
Fig. 2-4



5.2.5. LINK LEVER/FLAP LEVER/BOT COVER (Refer to Fig. 2-5)

1. Unlock the support ①.
2. Remove the BOT Cover.
3. Extend the support ②.
4. Remove the Link Lever.
5. Remove the Flap Lever.

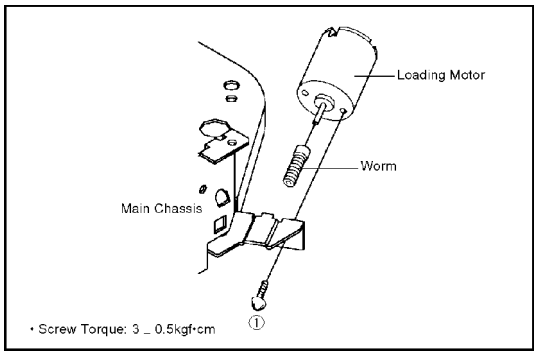
Fig. 2-5



5.2.6. LOADING MOTOR/WORM (Refer to Fig. 2-6-A)

1. Remove the screw ①.
2. Remove the Loading Motor.
3. Remove the Worm.

Fig. 2-6-A



NOTE

1. In case of the Worm installation, check if the value of the Fig. 2-6-B is correct.
2. In case of the Loading Motor installation, hook the wire on the Cassette Opener as shown Fig. 2-6-C.
3. When installing the wires between Capstan DD Unit and Loading Motor, connect them correctly as shown Fig. 2-6-D.

Fig. 2-6-B

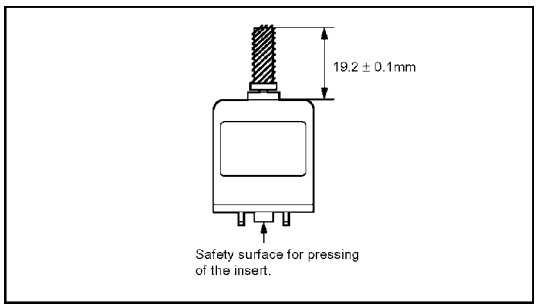


Fig. 2-6-C

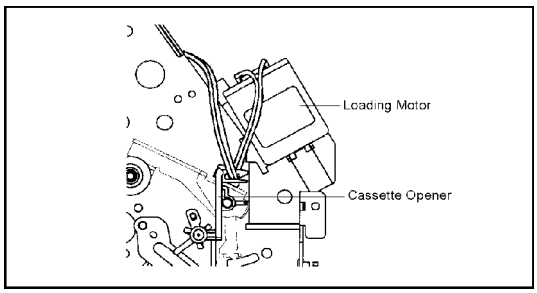
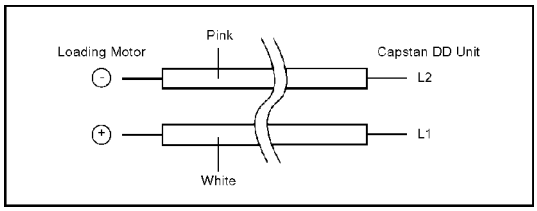


Fig. 2-6-D



5.2.7. TENSION ASS'Y (Refer to Fig. 2-7-B)

1. Turn the Pinch Roller Cam clockwise so that the Tension Holder hook is set to the position of Fig. 2-7-A to move the Tension Arm Ass'y.
2. Remove the Tension Spring.
3. Unlock the 2 supports ① and remove the Tension Band.
4. Unlock the support ② and remove the Tension Arm Ass'y.
5. Unlock the support ③ and remove the Tension Connect.
6. Float the hook ④ and turn it clockwise then remove the Tension Holder.

Fig. 2-7-A

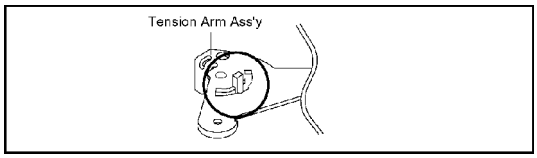
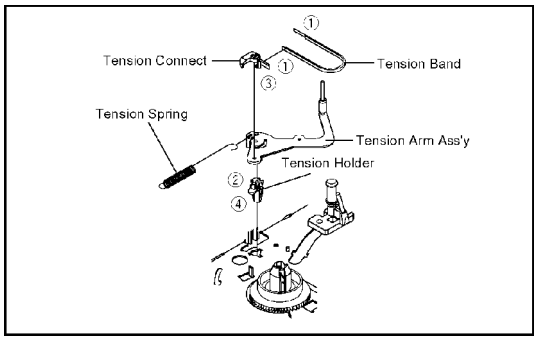


Fig. 2-7-B



NOTE

1. In case of the Tension Band installation, note the direction of the installation. (Refer to Fig. 2-7-C)
2. In case of the Tension Band installation, install correctly as Fig. 2-7-D.
3. In case of the Tension Connect installation, install as the circled

section of Fig. 2-7-E.

Fig. 2-7-C

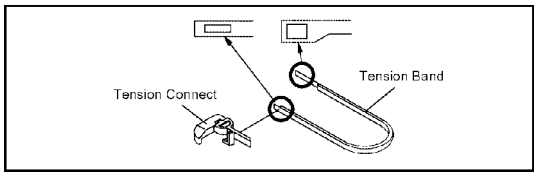


Fig. 2-7-D

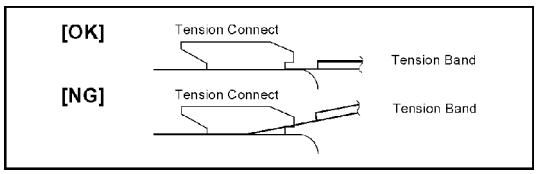
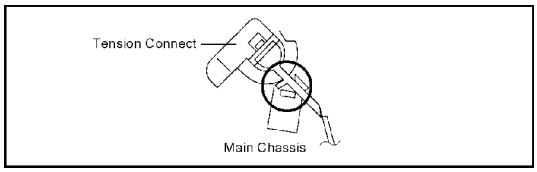


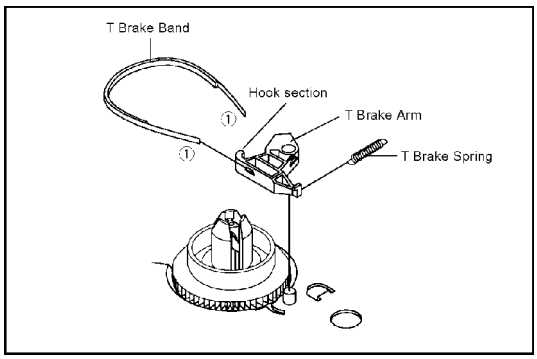
Fig. 2-7-E



5.2.8. T BRAKE ARM/T BRAKE BAND (Refer to Fig. 2-8-A)

1. Remove the T Brake Spring.
2. Turn the T Brake Arm clockwise and bend the hook section to remove it.
3. Unlock the 2 supports ① and remove the T Brake Band.

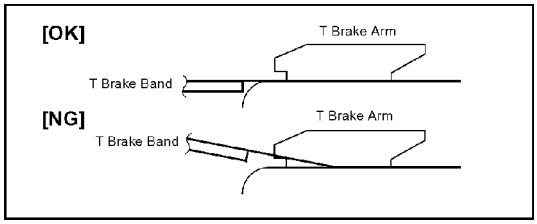
Fig. 2-8-A



NOTE

1. In case of the T Brake Band installation, install correctly as Fig. 2-8-B.

Fig. 2-8-B



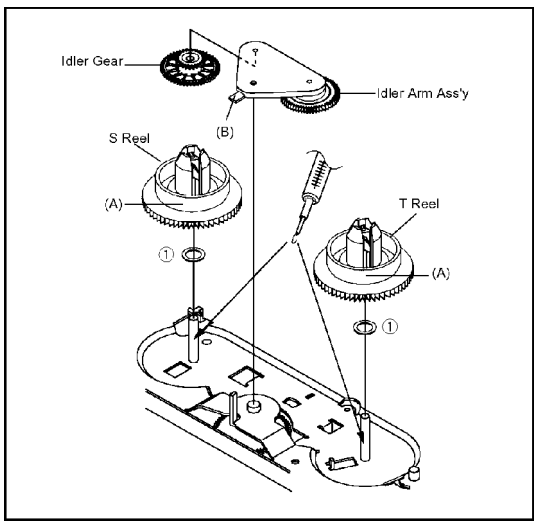
5.2.9. S REEL/T REEL/IDLER ARM ASS'Y/IDLER GEAR (Refer to Fig. 2-9-A)

1. Remove the S Reel and T Reel.
2. Remove the 2 Polyslider Washers ①.
3. Remove the Idler Arm Ass'y and Idler Gear.

NOTE

1. Take care not to damage the gears of the S Reel and T Reel.
2. The Polyslider Washer may be remained on the back of the reel.
3. Take care not to damage the shaft.
4. Do not touch the section "A" of S Reel and T Reel.
   (Use gloves.) (Refer to Fig. 2-9-A) Do not adhere the stainson it.
5. When you install the reel, clean the shaft and grease it.
   (If you do not grease, noise may be heard in FF/REW mode.)
6. After installing the reel, adjust the height of the reel.
   (Refer to MECHANICAL ADJUSTMENT)

Fig. 2-9-A



NOTE

1. In case of the S Reel and T Reel installation, check if the correct parts are installed. (Refer to Fig. 2-9-B)
2. In case of the Idler Arm Ass'y installation, install correctly as Fig. 2-9-C. And also set it so that the section "B" of Fig. 2-9-A is placed underthe Main Chassis tab.

Fig. 2-9-B

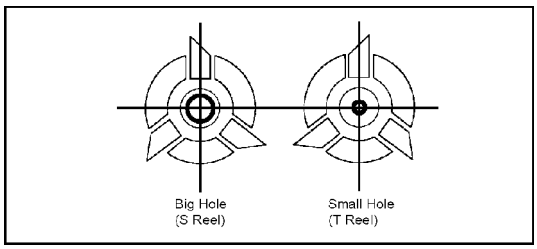
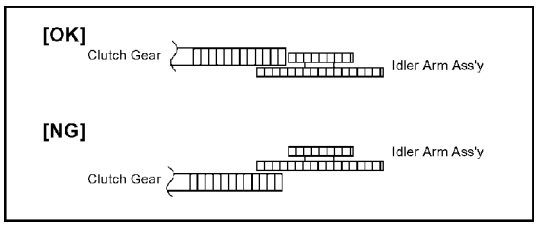


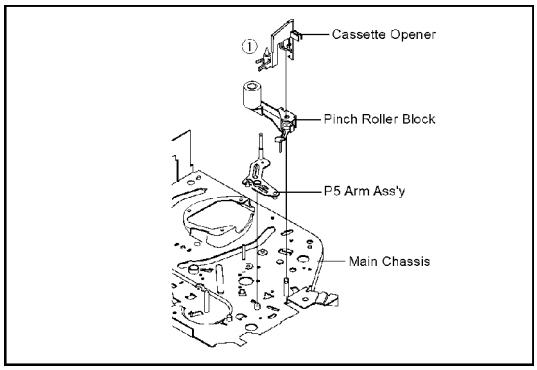
Fig. 2-9-C



5.2.10. CASSETTE OPENER/PINCH ROLLER BLOCK/P5 ARM ASS'Y (Refer to Fig. 2-10-A)

1. Unlock the support ① and remove the Cassette Opener.
2. Remove the Pinch Roller Block and P5 Arm Ass'y.

Fig. 2-10-A

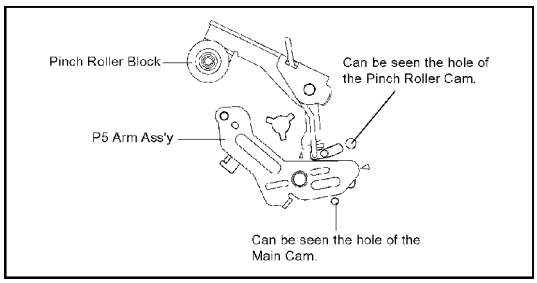


NOTE

1. Do not touch the Pinch Roller. (Use gloves.)
2. In case of the Pinch Roller Block and the Pinch Roller Cam

installation, install correctly as Fig. 2-10-B.

Fig. 2-10-B



5.2.11. A/C HEAD (Refer to Fig. 2-11-A)

1. **Remove the screw ①.**
2. **Remove the A/C Head Base.**
3. **Remove the 3 screws ②.**
4. **Remove the A/C Head and A/C Head Spring.**

NOTE

1. **Do not touch the A/C Head. (Use gloves.)**
2. **When you install the A/C Head Spring, install as shown in Fig. 2-11-B.**
3. **When you install the A/C Head, tighten the screw (1) first, then tighten the screw (2), finally tighten the screw (3).**

Fig. 2-11-A

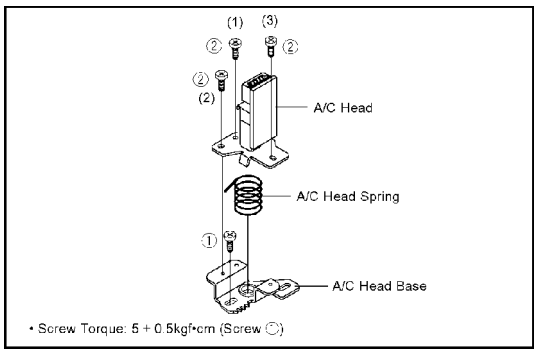
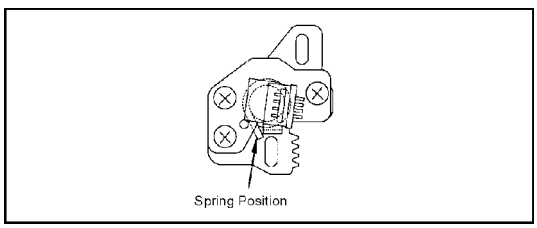


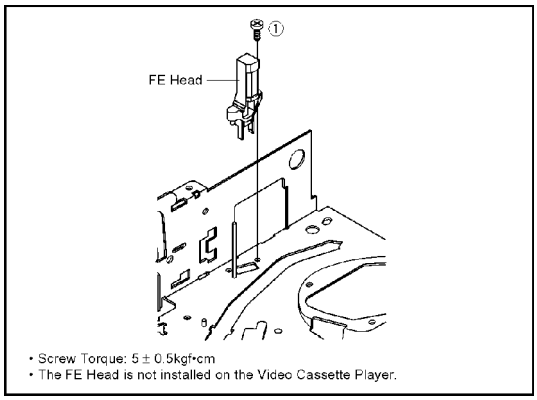
Fig. 2-11-B



5.2.12. FE HEAD (RECORDER ONLY) (Refer to Fig. 2-12)

1. Remove the screw ①.
2. Remove the FE Head.

Fig. 2-12



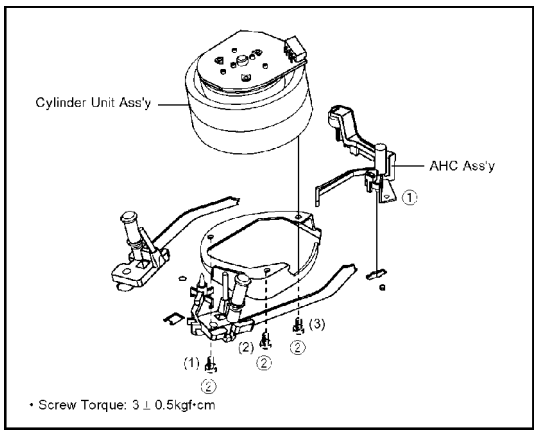
5.2.13. AHC ASS'Y/CYLINDER UNIT ASS'Y (Refer to Fig. 2-13)

1. Unlock the support ① and remove the AHC Ass'y.
2. Disconnect the following connector:
   (CD2001)
3. Remove the 3 screws ②.
4. Remove the Cylinder Unit Ass'y.

NOTE

1. When you install the Cylinder Unit Ass'y, tighten the screws from (1) to (3) in order while pulling the Ass'y toward the left front direction.

Fig. 2-13



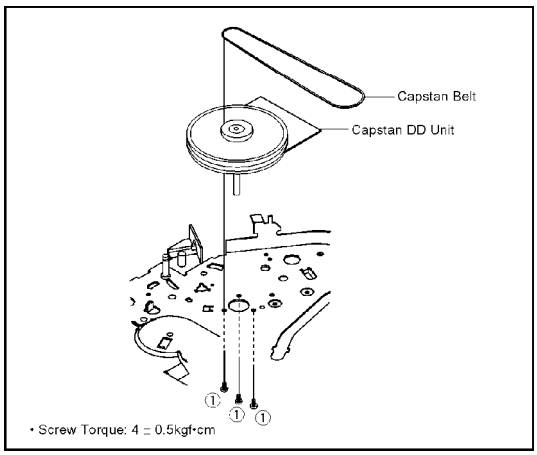
5.2.14. CAPSTAN DD UNIT (Refer to Fig. 2-14-A)

1. Remove the Capstan Belt.

2. Remove the 3 screws ①.

3. Remove the Capstan DD Unit.

Fig. 2-14-A



NOTE

1. In case of the Capstan DD Unit installation, apply the silicon bond (TSE3843-W) on the position Fig. 2-14-B correctly. (If no silicon bond applied, abnormal noise will be heard on the deck operation.) (Refer to Fig. 2-14-B, Fig. 2-14-C)

Fig. 2-14-B

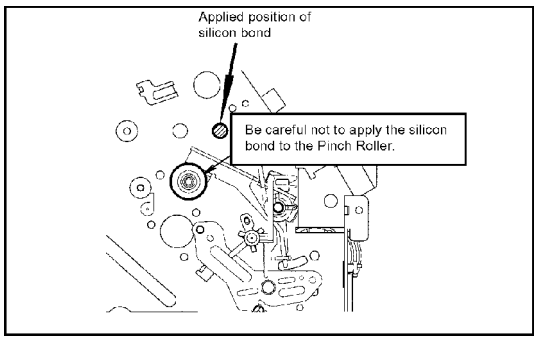
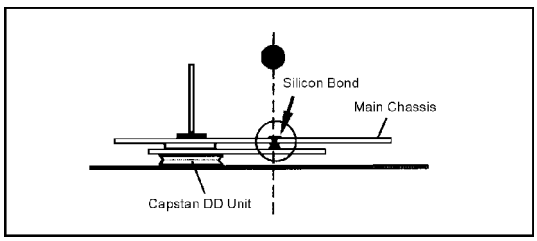


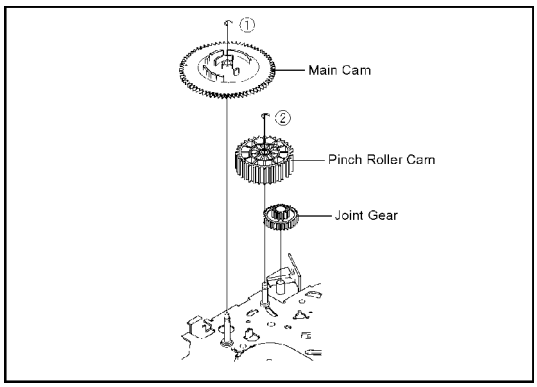
Fig. 2-14-C



5.2.15. MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-15-A)

1. Remove the E-Ring ①, then remove the Main Cam.
2. Remove the E-Ring ②, then remove the Pinch Roller Cam and Joint Gear.

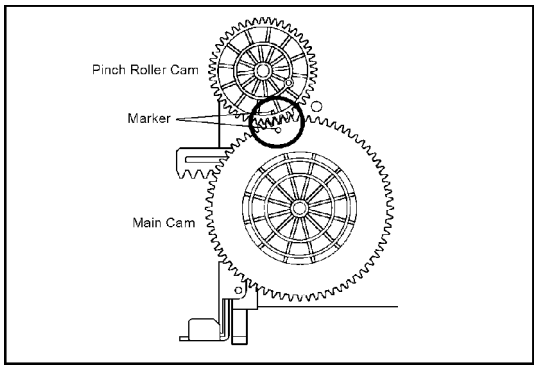
Fig. 2-15-A



NOTE

1. In case of the Pinch Roller Cam and Main Cam installation, install them as the circled section of Fig. 2-15-B so that the each markers are met. (Refer to Fig.2-15-B)

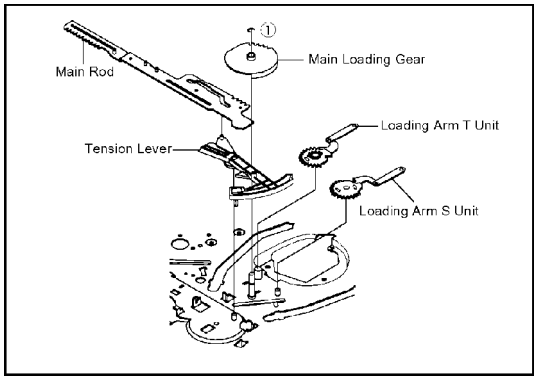
Fig. 2-15-B



5.2.16. LOADING GEAR S/T UNIT (Refer to Fig. 2-16-A)

1. Remove the E-Ring ① and remove the Main Loading Gear.
2. Remove the Main Rod, Tension Lever, Loading Arm S Unit and Loading Arm T Unit.

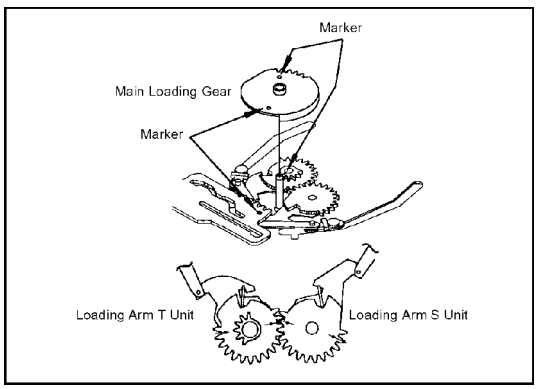
Fig. 2-16-A



NOTE

1. When you install the Loading Arm S Unit, Loading Arm T Unit and Main Loading Gear, align each marker. (Refer to Fig. 2-16-B)

Fig. 2-16-B



5.2.17. CLUTCH ASS'Y/RING SPRING/CLUTCH LEVER/CLUTCH GEAR (Refer to Fig. 2-17-A)

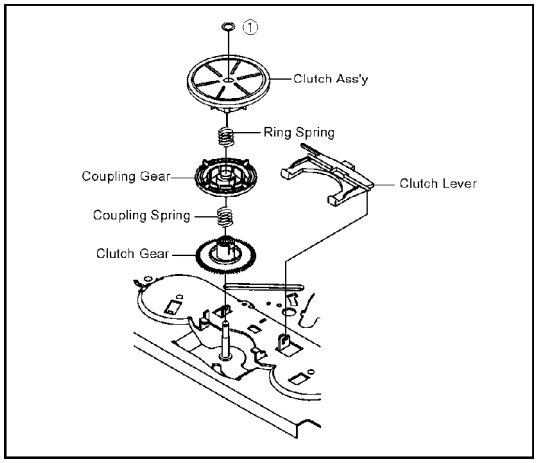
1. Remove the Polyslider Washer ①.

2. Remove the Clutch Ass'y and Ring Spring.

3. Remove the Clutch Lever.

4. Remove the Coupling Gear, Coupling Spring and Clutch Gear.

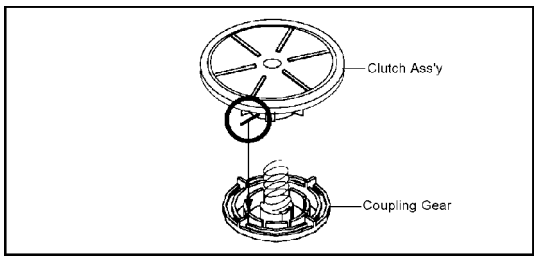
Fig. 2-17-A



NOTE

1. **In case of the Clutch Ass'y installation, install it with inserting the spring of the Clutch Ass'y into the dent of the Coupling Gear. (Refer to Fig. 2-17-B)**

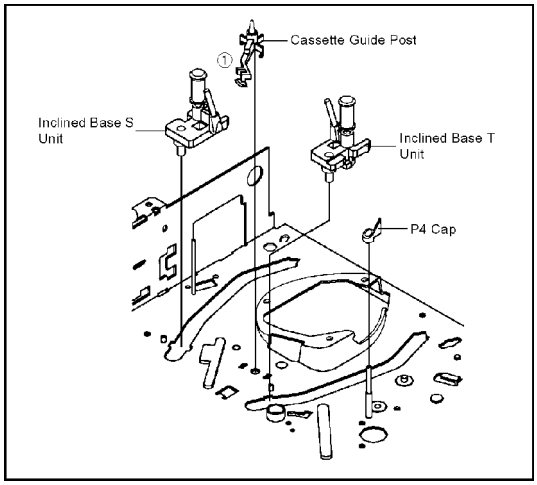
Fig. 2-17-B



5.2.18. CASSETTE GUIDE POST/INCLINED BASE S/T UNIT/P4 CAP (Refer to Fig. 2-18-A)

1. **Remove the P4 Cap.**
2. **Unlock the support ① and remove the Cassette Guide Post.**
3. **Remove the Inclined Base S Unit and Inclined Base T Unit.**

Fig. 2-18-A



NOTE

1. **Do not touch the roller of Guide Roller.**
2. **In case of the P4 Cap installation, install it with parallel for "A" and "B" of Fig. 2-18-B.**
3. **In case of the Cassette Guide Post installation, install correctly as the circled section of Fig. 2-18-C.**

Fig. 2-18-B

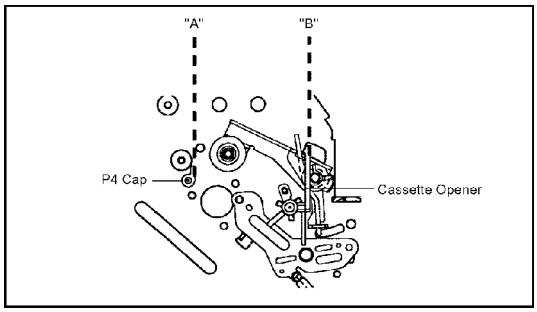
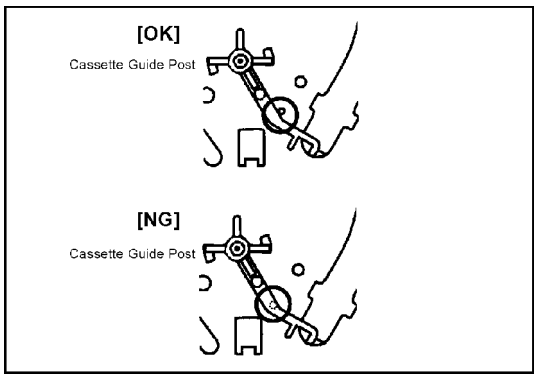


Fig. 2-18-C



5.3. REMOVAL OF ANODE CAP

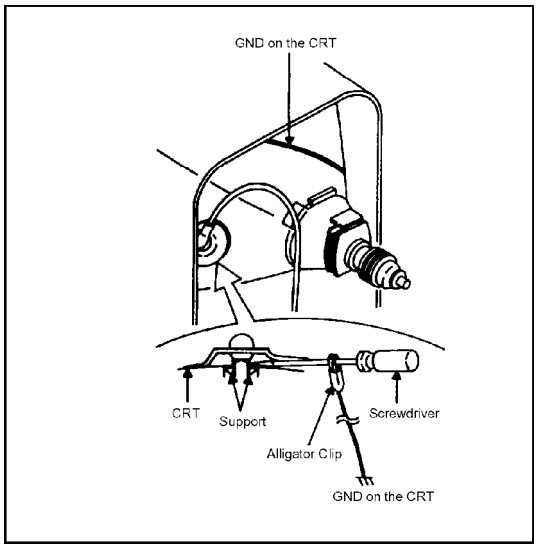
Read the following NOTED items before starting work.

- After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
- Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

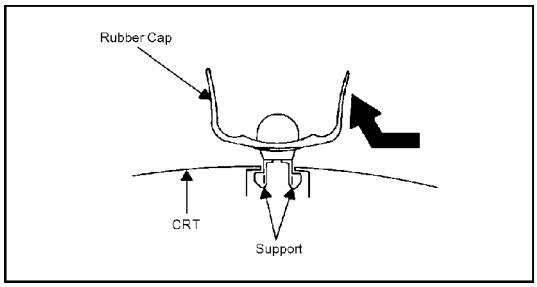
1. Follow the steps as follows to discharge the Anode Cap. (Refer to Fig. 3-1.)
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

Fig. 3-1



2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. (Refer to Fig. 3-2.)

Fig. 3-2



3. After one side is removed, pull in the opposite direction to remove

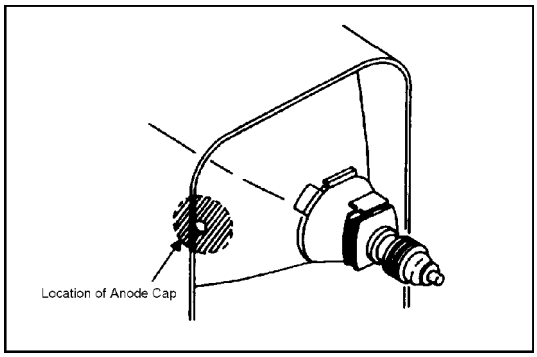
the other.

NOTE
Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. (Refer to Fig. 3-3.)

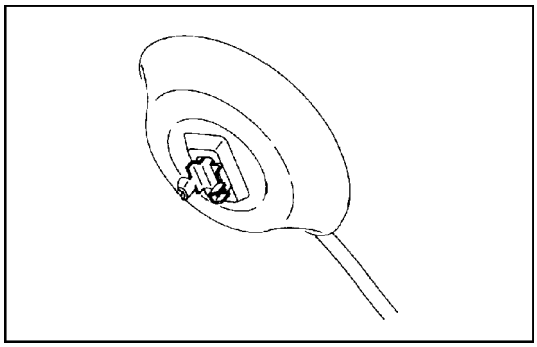
Fig. 3-3



NOTE
Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

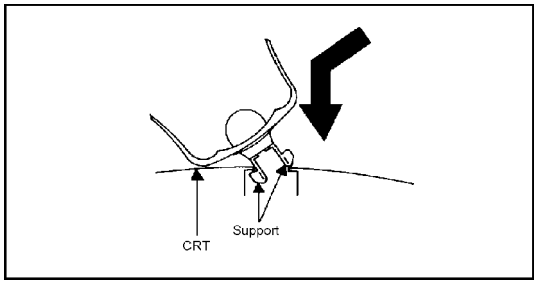
2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. (Refer to Fig. 3-4.)

Fig. 3-4



4. Insert one end of the Anode Support into the anode button, then the other as shown in Fig. 3-5 .

Fig. 3-5



5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

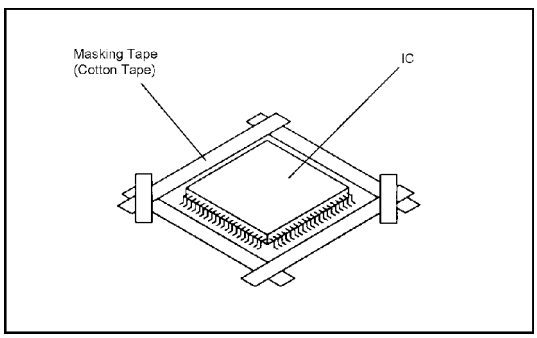
5.4. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. (Refer to Fig. 4-1.)

NOTE
Masking is carried out on all the parts located within 10 mm distance from IC leads.

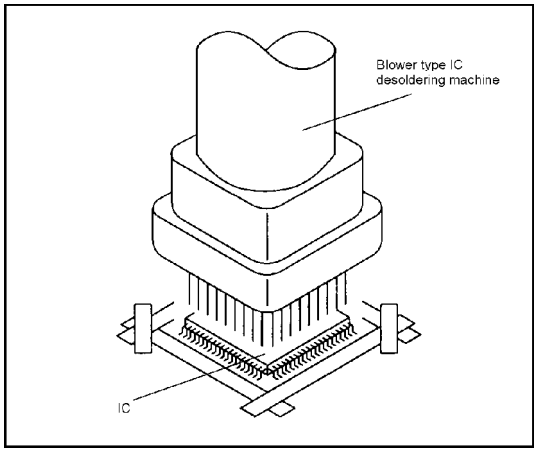
Fig. 4-1



2. Heat the IC leads using a blower type IC desoldering machine. (Refer to Fig. 4-2.)

NOTE
Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

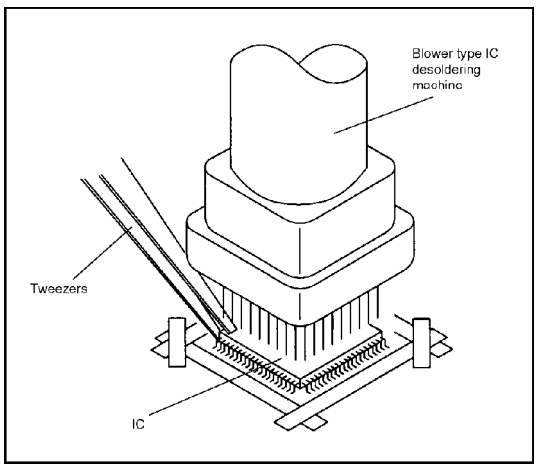
Fig. 4-2



3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. (Refer to Fig. 4-3.)

NOTE
Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

Fig. 4-3

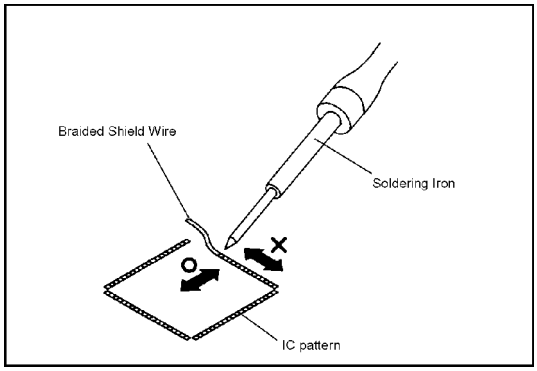


4. Peel off the Masking Tape. 4.

5. Absorb the solder left on the pattern using the Braided Shield Wire. (Refer to Fig. 4-4.)

NOTE
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

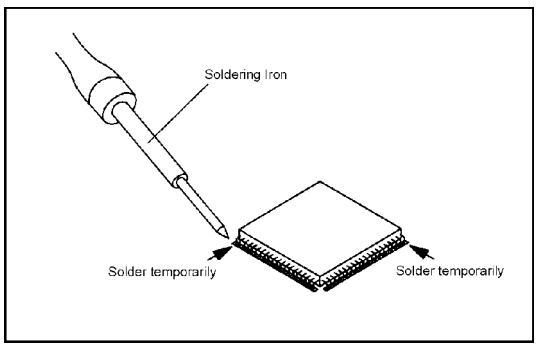
Fig. 4-4



INSTALLATION

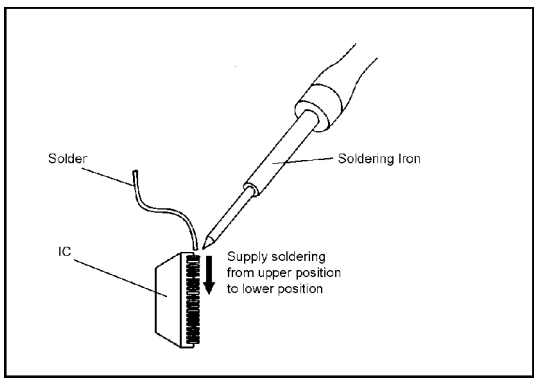
1. **Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. (Refer to Fig. 4-5.)**

Fig. 4-5



2. **Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. (Refer to Fig. 4-6.)**

Fig. 4-6

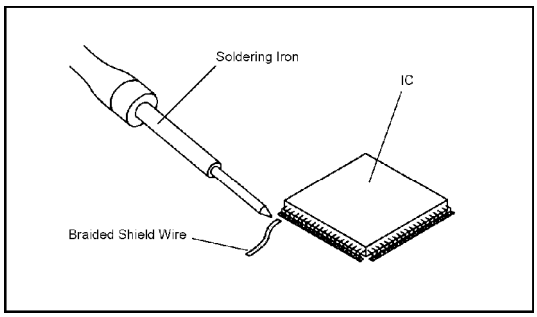


3. **Absorb the solder left on the lead using the Braided Shield Wire. (Refer to Fig. 4-7.)**

NOTE

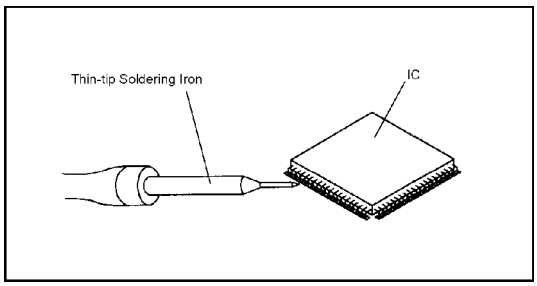
Do not absorb the solder to excess.

Fig. 4-7



4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. (Refer to Fig. 4-8.)

Fig. 4-8



5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

NOTE
When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

6. KEY TO ABBREVIATIONS

7. SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.
To enter SERVICE MODE, Unplug AC cord till lost actual clock time. Then press and hold Vol (-) button of main unit and remocon key for more than 1 second.

The both pressing of main unit key and remote control key will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 5 seconds before Power On.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the clock setting, the channel setting, the POWER ON total hours, and PLAY/REC total hours.
VOL. (-) MIN	2	Horizontal position adjustment of OSD. NOTE: Also can be adjusted by using the Adjustment MENU. Refer to the "ELECTRICAL ADJUSTMENT" (OSD HORIZONTAL).
VOL. (-) MIN	3	Adjust the PG SHIFTER automatically. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	4	Adjust the PG SHIFTER manually. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	5	Adjusting of the Tracking to the center position. NOTE: Also can be adjusted by pressing the ATR button for more than 2 seconds during PLAY.
VOL. (-) MIN	6	POWER ON total hours and PLAY/REC total hours are displayed on the screen. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF HOURS USED). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	7	Remocon code selection. NOTE: If you perform the remocon code selection, the remocon cannot be used. So, do not select the remocon code for the normal servicing.
VOL. (-) MIN	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

Method	Operations
Press the ATR button on the remote control for more than 2 seconds during PLAY.	Adjusting of the Tracking to the center position. Refer to the "MECHANICAL ADJUSTMENT" (GUIDE ROLLER) and "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
Make the short circuit between the test point of SERVICE and the GND.	The BOT, EOT, and the Reel Sensor do not work and the deck can be operated without a cassette tape. Refer to the "PREPARATION FOR SERVICING"

8. PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage.
Parts replacing time does not mean the life span for individual parts.
Also, long term storage or misuse may cause transformation and aging of rubber parts.
The following list means standard hours, so the checking hours depends on the conditions.

Time / Parts Name	500 hours	1,000 hours	1,500 hours	2,000 hours	2,500 hours	Notes
Audio Control Head	■	■	■	●	●	Clean those parts in contact with the tape.
Full Erase Head (Recorder only)	■	■	■	●	●	
Capstan Belt		●	●	●	●	Clean the rubber, and parts which the rubber touches.
Pinch Roller	■	●	●	●	●	
Capstan DD Unit		●	●	●	●	
Loading Motor					●	
Tension Band		●	●	●	●	
T Brake Band		●	●	●	●	
Clutch Ass'y		●	●	●	●	
Idler Arm Ass'y		●	●	●	●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	●	●	●	●	Clean the Head

■ : Clean
● : Check it and if necessary, replace it.

CONFIRMATION OF HOURS USED

POWER ON total hours and PLAY/REC total hours can be checked on the screen.
Total hours are displayed in 16 system of notation.

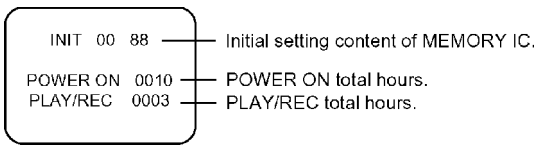
NOTE:

If you set a factory initialization, the total hours is reset to "0".
The confirmation of using hours will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 5 seconds before Power On.

1. Set the VOLUME to minimum.

2. Press both VOL. DOWN button on the set and the Channel button (6) on the remote control for more than 1 second.

3. After the confirmation of using hours, turn off the power.



(16 × 16 × 16 × thousands digit value) + (16 × 16 × hundreds digit value) + (16 × tens digit value) + (ones digit value)

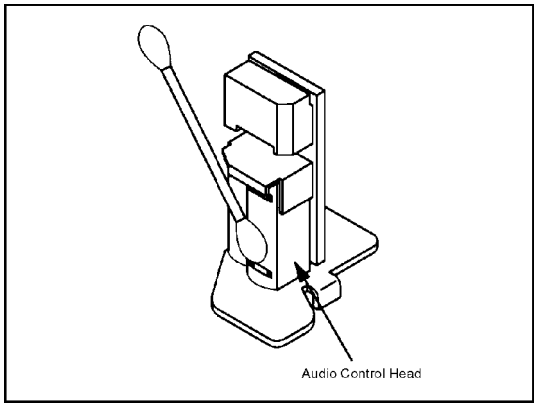
CLEANING

NOTE

After cleaning the heads with isopropyl alcohol, do not run a tape until the heads dry completely. If the heads are not completely dry and alcohol gets on the tape, damage may occur.

1. AUDIO CONTROL HEAD

Clean the Audio Control Head with the cotton stick soaked by alcohol. Clean the full erase head in the same manner. (Refer to the figure below.)



2. TAPE RUNNING SYSTEM

When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

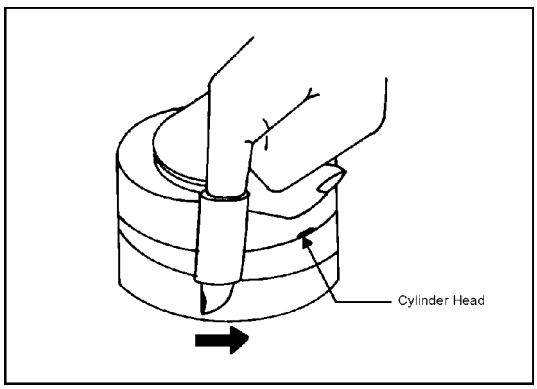
3. CYLINDER

Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly.

Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). (Refer to the figure below.)

NOTE

Do not exert force against the cylinder head. Do not move the chamois upward or downward on the head.Use the chamois one by one.



9. WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE:
Initial Data setting will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 5 seconds before Power On.
No need setting for after INI 29 due to the adjustment value.

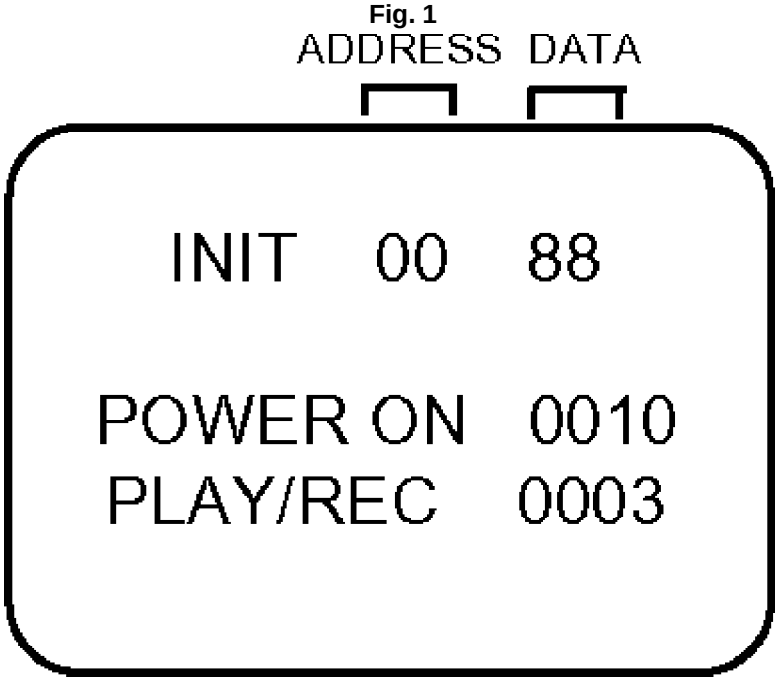
INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	88	0A	E2	63	4B	14	34	0B	51	3A	10	9E	19	40	00	29
10	AB	94	91	86	00	00	10	1D	85	00	AC	0F	A5	3E	0A	AC
20	06	3B	01	17	10	60	32	3A	BA	D7	---	---	---	---	---	---

Table 1

Name	Data
CANADA V-CHIP	0
V-CHIP OSD	0
TAPE SPEED	0
STEREO	0
2HEAD/4HEAD	0
VISS	0
VCR+	0
REMOCON 1	0
REMOCON 2	1
OSD LP	0
INDEX TYPE	0
DAYLIGHT AUTO	1

1. **Enter DATA SET mode by setting VOLUME to minimum.**
2. **Press both VOL. DOWN button on the set and Channel button (6) on the remote control for more than 1 second. ADDRESS and DATA should appear as Fig. 1.**

Fig. 1

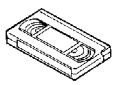
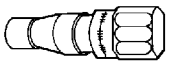
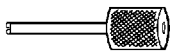
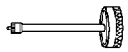
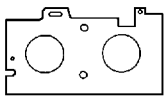
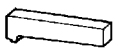
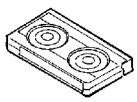
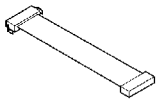
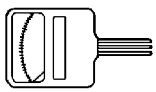


3. **ADDRESS is now selected and should "blink". Using the VOL. UP/ DOWN button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.**
4. **Press ENTER to select DATA. When DATA is selected, it will "blink".**
5. **Again, step through the DATA using VOL. UP/DOWN button until**

required DATA value has been selected.

6. **Pressing ENTER will take you back to ADDRESS for further selection if necessary.**
7. **Repeat steps 3 to 6 until all data has been checked.**
8. **When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.**
   After the data input, set to the initializing of shipping.
9. **Turn POWER on.**
10. **Press both VOL. DOWN button on the set and Channel button (1) on the remote control for more than 1 second.**
11. **After the finishing of the initializing of shipping, the unit will turn off automatically.**
    The unit will now have the correct DATA for the new MEMORY IC.

10. SERVICING FIXTURES AND TOOLS

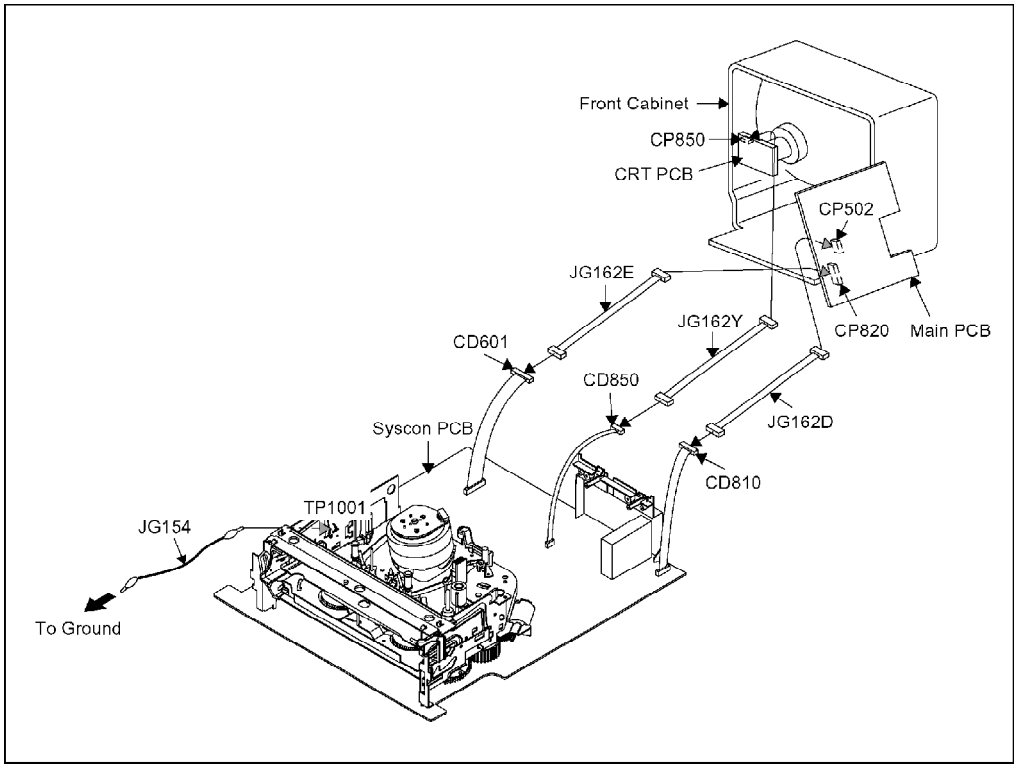
VHS Alignment Tape JG001 (VN_2S-$LI6^3$) JG001Q (VN_2S-$LI6^3H$) JG001T (VN_2S-$X6^3$) 	JG002B Adapter JG002E Dial Torque Gauge (10~90gf•cm) JG002F (60~600gf•cm) 	JG005 Post Adjustment Screwdriver Part No. SV-TG0-030-000 (small) 	JG153 X Value Adjustment Screwdriver 
JG022 Master Plane 	JG024A Reel Disk Height Adjustment Jig 	JG100A Torque Tape (VHT-063) 	JG154 Cable
JG162D Cable (11 Pins) JG162E Cable (12 Pins) JG162Y Cable (5 Pins) 	Tentelometer 		

Ref. No.	Part No.	Parts Name	Remarks
JG001	APJG001000	VHS Alignment Tape	Monoscope, 6KHz **(For 2 heads model)**
JG001Q	APJG001Q00	VHS Alignment Tape	Hi-Fi Audio **(For 2 heads model)**
JG001T	APJG001T00	VHS Alignment Tape	X Value Adjustment **(For 2 heads model)**
JG002B	APJG002B00	Adapter	VSR Torque, Brake Torque (S Reel/T Reel Ass'y)
JG002E	APJG002E00	Dial Torque Gauge (10~90gf•cm)	Brake Torque (T Reel Ass'y)
JG002F	APJG002F00	Dial Torque Gauge (60~600gf•cm)	VSR Torque, Brake Torque (S Reel)
JG005	APJG005000	Post Adjustment Screwdriver	Guide Roller Adjustment
JG153	APJG153000	X Value Adjustment Screwdriver	X Value Adjustment
JG022	APJG022000	Master Plane	Reel Disk Height Adjustment
JG024A	APJG024A00	Reel Disk Height Adjustment Jig	Reel Disk Height Adjustment
JG100A	APJG100A00	Torque Tape (VHT-063)	Playback Torque, Back Tension Torque During Playback
JG154	APJG154000	Cable	Used to connect the test point of SERVICE and GROUND
JG162D	APJG162D00	Cable (11 Pins)	Used to connect the Syscon PCB and Main PCB
JG162E	APJG162E00	Cable (12 Pins)	Used to connect the Syscon PCB and Main PCB
JG162Y	APJG162Y00	Cable (5 Pins)	Used to connect the Syscon PCB and CRT PCB

11. PREPARATION FOR SERVICING

How to use the Servicing Fixture

1. **Unplug the connector CP353, CP502, CP820 and CP850, then remove the VCR Block from the set.**
   Be sure to place the parts on a paper so that they have no short-circuit each other.
2. **Connect as shown in the below figure using the Service Fixture.**
   - **Connect the Syscon PCB to the Main PCB with the cable JG162D and JG162E.**
   - **Connect the Syscon PCB to the CRT PCB with the cable JG162Y.**
3. **Short circuit between TP1001 and Ground with the cable JG154. (The BOT, EOT, and the Reel Sensor do not work and the deck can be operated without a cassette tape.)**
4. **In case of using a cassette tape, press the STOP/EJECT button to insert or eject a cassette tape.**
   Turn on the power and re-check the cable before checking the trouble points.



12. MECHANICAL ADJUSTMENTS

12.1. CONFIRMATION AND ADJUSTMENT

Read the following NOTES before starting work.

- Place an object which weighs between 450g~500g on the Cassette Tape to keep it steady when you want to make the tape run without the Cassette Holder. (Do not place an object which weighs over 500g.)

12.1.1. CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.

2. Set the master plane (JG022) and reel disk height adjustment jig (JG024A) on the mechanism framework, taking care not to scratch the drum, as shown in Fig. 1-1-A .

3. While turning the reel and confirm the following points.
Check if the surface "A" of reel disk is lower than the surface "B" of reel disk height adjustment jig (JG024A) and is higher than the surface "C". If it is not passed, place the height adjustment washers and adjust to 10 (+2,-0) mm.

4. Adjust the other reel in the same way.

Fig. 1-1-A

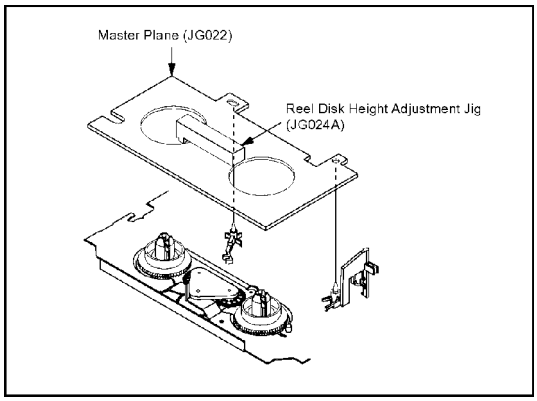
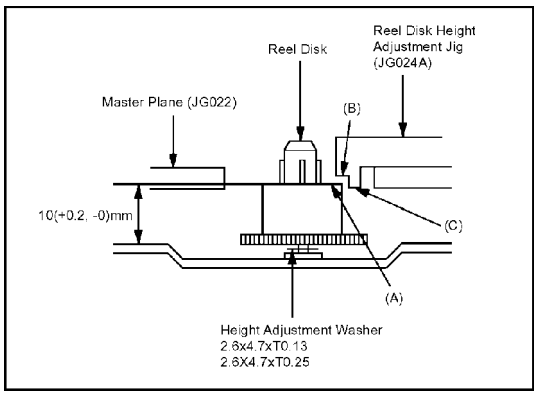


Fig. 1-1-B



12.1.2. CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. **Set to the PLAY mode.**
2. **Adjust the adjusting section for the Tension Arm position so that the Tension Arm top is within the standard line of Main Chassis.**
3. **While turning the S Reel clockwise, confirm that the edge of the Tension Arm is located in the position described above.**

Fig. 1-2-A

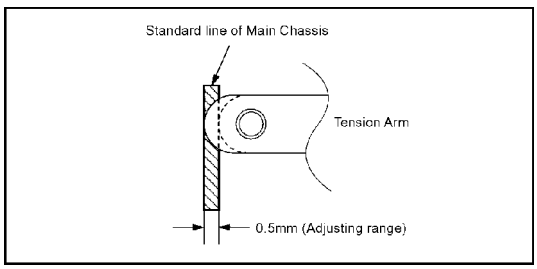
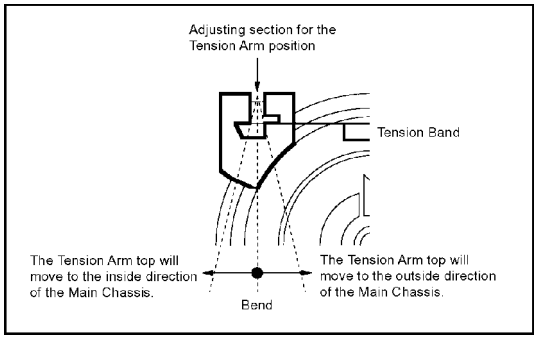


Fig. 1-2-B



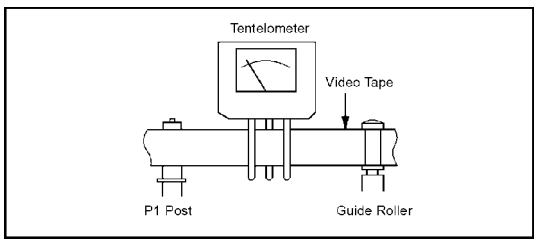
12.1.3. CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

1. **Load a video tape (T-120) recorded in standard speed mode. Set the unit to the PLAY mode.**
2. **Install the tentelometer as shown in Fig. 1-3. Confirm that the meter indicates 20 ± 2gf in the beginning of playback.**

- USING A CASSETTE TYPE TORQUE TAPE (JG100A)

1. **After confirmation and adjustment of Tension Post position (Refer to item 1-2), load the cassette type torque tape (JG100A) and set to the PLAY mode.**
2. **Confirm that the right meter of the torque tape indicates 50~90gf·cm during playback in SP mode.**
3. **Confirm that the left meter of the torque tape indicates 25~40gf·cm during playback in SP mode.**

Fig. 1-3



12.1.4. CONFIRMATION OF VSR TORQUE

1. **Install the Torque Gauge (JG002F) and Adapter (JG002B) on the S Reel. Set to the Picture Search (Rewind) mode. (Refer to Fig. 1-4-B)**
2. **Then, confirm that it indicates 120~180gf·cm.**

NOTE

Install the Torque Gauge on the reel disk firmly. Press the REW button to turn the reel disk.

12.1.5. CONFIRMATION OF REEL BRAKE TORQUE

(S Reel Brake) (Refer to Fig. 1-4-B)

1. **Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of Fig. 1-4-A.**
2. **Move the Idler Ass'y from the S Reel.**
3. **Install the Torque Gauge (JG002F) and Adapter (JG002B) on the S Reel. Turn the Torque Gauge (JG002F) clockwise.**
4. **Then, confirm that it indicates 60~100gf·cm.**

(T Reel Brake) (Refer to Fig. 1-4-B)

1. **Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of Fig. 1-4-A.**
2. **Move the Idler AssÅfy from the T Reel.**
3. **Install the Torque Gauge (JG002E) and Adapter (JG002B) on the T reel. Turn the Torque Gauge (JG002E) counterclockwise.**
4. **Then, confirm that it indicates 30~50gf·cm.**

Fig. 1-4-A

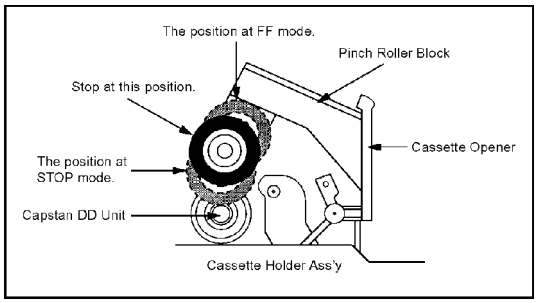
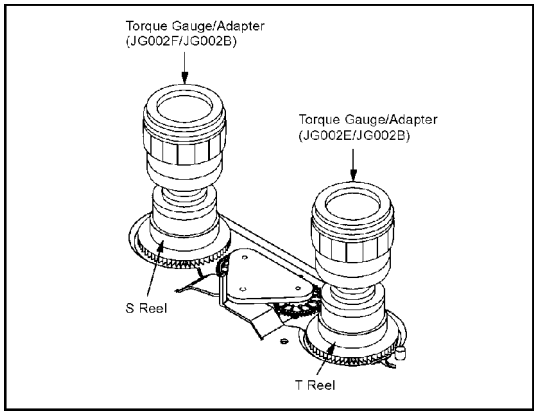


Fig. 1-4-B



NOTE
If the torque is out of the range, replace the following parts.

Check item	Replacement Part
1-4	Idler Ass'y/Clutch Ass'y
1-5	S Reel side: S Reel/Tension Band/Tension Connect/Tension Arm Ass'y T Reel side: T Reel/T Brake Band//T Brake Spring/T Brake Arm

12.2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

Tape Running Mechanism is adjusted precisely at the factory. Adjustment is not necessary as usual. When you replace the parts of the tape running mechanism because of long term usage or failure, the confirmation and adjust-ment are necessary.

12.2.1. GUIDE ROLLER

1. **Playback the VHS Alignment Tape (JG001).**
   (Refer to SERVICING FIXTURE AND TOOLS)
2. **Connect CH-1 of the oscilloscope to TP4001 (Envelope) and CH-2 to TP1002 (SW Pulse).**
3. **Press and hold the ATR button on the remote control more than 2 seconds to set tracking to center.**
4. **Trigger with SW Pulse and observe the envelope. (Refer to Fig. 2-1-A)**
5. **When observing the envelope, adjust the Adjusting Driver (JG005) slightly until the envelope will be flat.**
   Even if you press the Tracking Button, adjust so that flatness is not moved so much.
6. **Adjust so that the A : B ratio is better than 3 : 2 as shown in Fig. 2-1-B, even if you press the Tracking Button to move the envelope**

(The envelope waveform will begin to decrease when youpress the Tracking Button).

7. **Adjust the PG shifter during playback.**
   (Refer to the ELECTRICAL ADJUSTMENTS)

NOTE
After adjustment, confirm and adjust A/C head.
(Refer to item 2-2)

Fig. 2-1-A

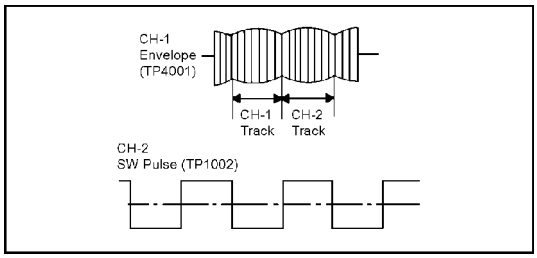
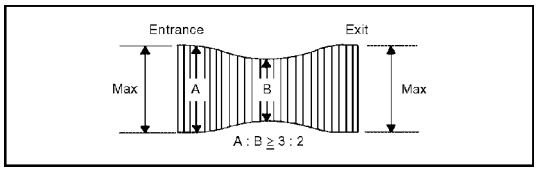


Fig. 2-1-B



12.2.2. CONFIRMATION AND ADJUSTMENT OF AUDIO/CONTROL HEAD

When the Tape Running Mechanism does not work well, adjust the following items.

1. **Playback the VHS Alignment Tape (JG001).**
   (Refer to SERVICING FIXTURE AND TOOLS)
2. **Confirm that the reflected picture of stamp mark is appeared on the tape prior to P4 Post as shown in Fig. 2-2-A.**
   A. When the reflected picture is distorted, turn the screw ① clockwise until the distortion is disappeared.
   B. When the reflected picture is not distorted, turn the screw ① counterclockwise until little distortion is appeared, then adjust the a).
3. **Turn the screw ② to set the audio level to maximum.**
4. **Confirm that the bottom of the Audio/ Control Head and the bottom of the tape is shown in Fig. 2-2-C.**
   A. When the height is not correct, turn the screw ③ to adjust the height. Then, adjust the 1~3 again.

Fig. 2-2-A

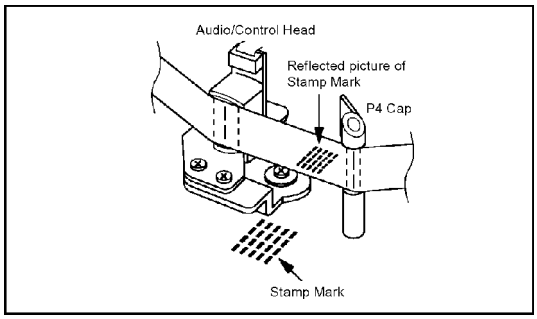


Fig. 2-2-B

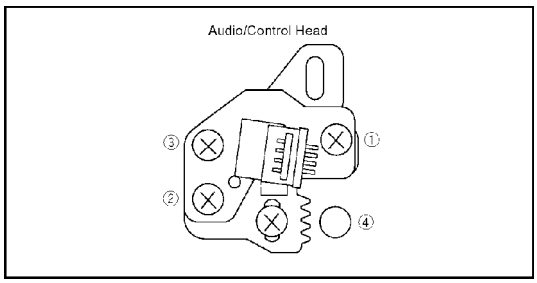
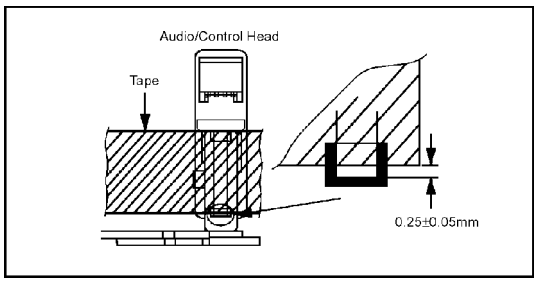


Fig. 2-2-C



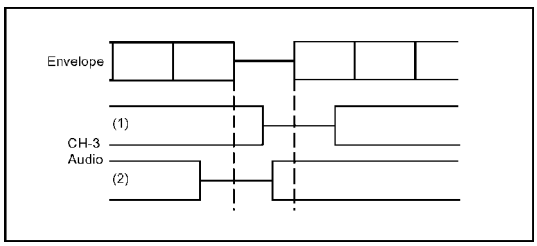
12.2.3. TAPE RUNNING ADJUSTMENT (X VALUE ADJUSTMENT)

1. **Confirm and adjust the height of the Reel Disk.**
   (Refer to item 1-1)
2. **Confirm and adjust the position of the Tension Post.**
   (Refer to item 1-2)
3. **Adjust the Guide Roller. (Refer to item 2-1)**
4. **Confirm and adjust the Audio/Control Head.**
   (Refer to item 2-2)
5. **Connect CH-1 of the oscilloscope to TP1002, CH-2 to TP4001 and CH-3 to HOT side of Audio Out Jack.**
6. **Playback the VHS Alignment Tape (JG001T).**
   (Refer to SERVICING FIXTURE AND TOOLS)
7. **Press and hold the ATR button on the remote control more than 2**

seconds to set tracking to center.

8. Set the X Value adjustment driver (JG153) to the ④ of Fig. 2-2-B. Adjust X value so that the envelope waveform outputbecomes maximum. Check if the relation between Audio and Envelope waveform becomes (1) or (2) of Fig. 2-3 .

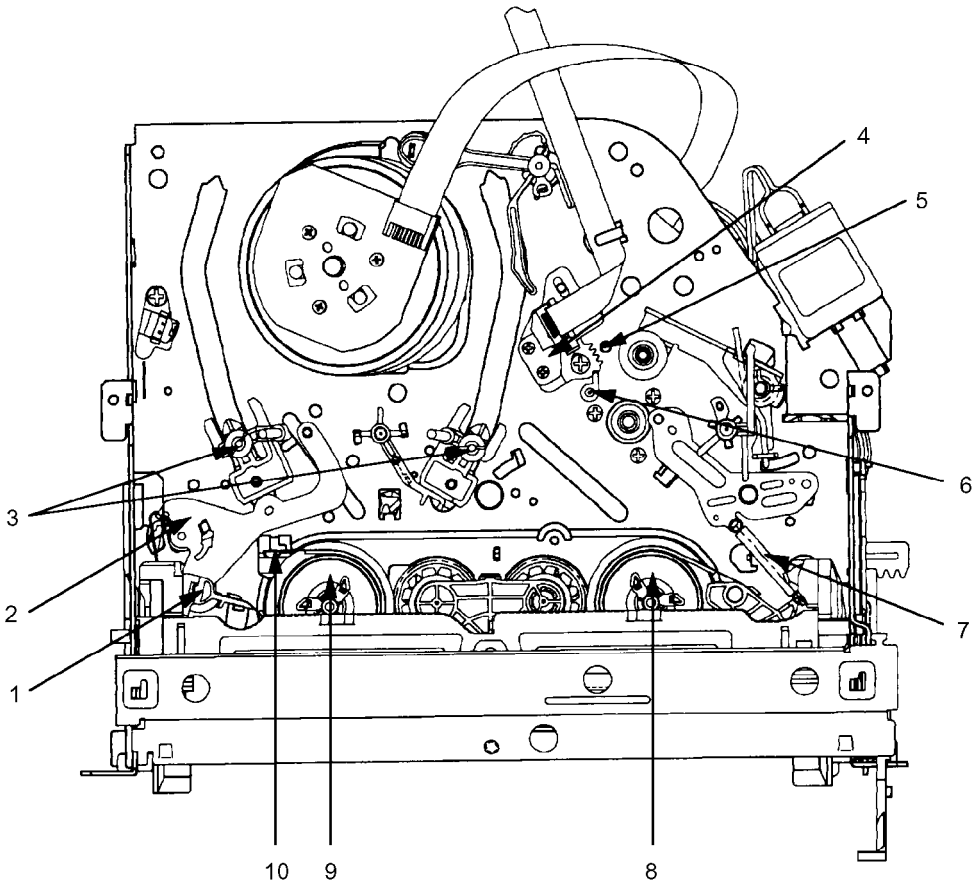
Fig. 2-3



12.2.4. CONFIRM HI-FI AUDIO (Hi-Fi model only)

1. Connect CH-1 of the oscilloscope to TP4001 and CH-2 to the Hi-Fi Audio Out Jack.
2. Playback the VHS Alignment Tape (JG001Q).
   (Refer to SERVICING FIXTURE AND TOOLS)
3. Press and hold the ATR button on the remote control more than 2 seconds to set tracking to center.
4. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
6. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
7. If the difference are more than 3 steps, set the X Value adjustment driver (JG153) to ④ of Fig. 2-2-B.Change the X Value and adjust it so that the value becomes within 2 steps.

12.3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



1. Tension Connect
2. Tension Arm
3. Guide Roller
4. Audio/Control Head
5. X value adjustment driver hole
6. P4 Post
7. T Brake Spring
8. T Reel
9. S Reel
10. Adjusting section for the Tension Arm position

13. ELECTRICAL ADJUSTMENTS

13.1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.

- Before removing the anode cap, discharge electricity because it contains high voltage.

- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.

- When you exchange IC and Transistor for a heat sink, apply the silicon grease (YG6260M) on the contact section of the heat sink.

Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damagesto the IC and Transistor).

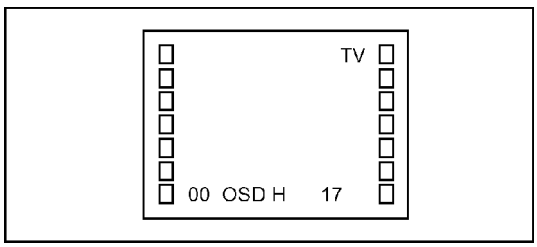
Prepare the following measurement tools for electrical adjustments.

1. **Oscilloscope**
2. **Digital Voltmeter**
3. **Pattern Generator**

On-Screen Display Adjustment

1. **Unplug the AC plug for more than 5 seconds to set the clock to the non-setting state. Then, set the volume level to minimum.**
2. **Press the VOL. DOWN button on the set and the Channel button (9) on the remote control for more than 1 second to appear the adjustment mode on the screen as shown in Fig. 1-1.**

Fig. 1-1



3. **Use the Channel UP/DOWN button or Channel button (0-9) on the remote control to select the options shown in Fig. 1-2.**
4. **Press the MENU button on the remote control to end the adjustments.**

Fig. 1-2

NO.	FUNCTION	NO.	FUNCTION
00	OSD H	13	BRIGHTNESS
01	CUT OFF	14	CONTRAST
02	RF AGC	15	COLOR
03	VIF VCO	16	TINT
04	H VCO	17	SHARPNESS
05	H PHASE	18	FM LEVEL
06	V SIZE	19	LEVEL
07	V SHIFT	20	SEPARATION 1
08	R DRIVE	21	SEPARATION 2
09	B DRIVE	22	TEST MONO
10	R CUT OFF	23	TEST STEREO
11	G CUT OFF	24	X-RAY TEST
12	B CUT OFF		

13.2. BASIC ADJUSTMENTS (VCR SECTION)

13.2.1. PG SHIFTER

1. Connect CH-1 on the oscilloscope to TP1002 and CH-2 to TP4201.
2. Playback the alignment tape. (JG001)
3. Press and hold the ATR button on the remote control more than 2 seconds to set tracking to center.
4. Press the VOL. DOWN button on the set and the channel button (3) on the remote control for more than 1 second until the indicator REC disappears. If the indicator REC disappears, adjustment is completed.

(If the above adjustments doesn't work well:)

5. Press the VOL. DOWN button on the set and the channel button (3) on the remote control for more than 1 second until the indicator REC disappears.
6. When the REC indicator is blinking, press both VOL. DOWN button on the set and the channel button (4) on the remote control for more than 2 seconds and adjust the Tracking +/- button until the arising to the down of Head Switching Pulse becomes 6.5 ± 0.5H. (Referto Fig. 2-1-A, Fig. 2-1-B)

Fig. 2-1-A

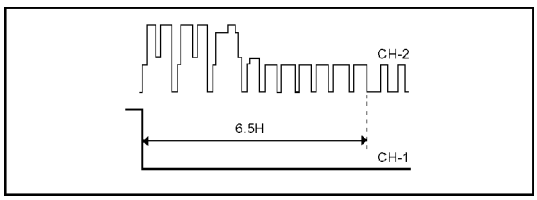
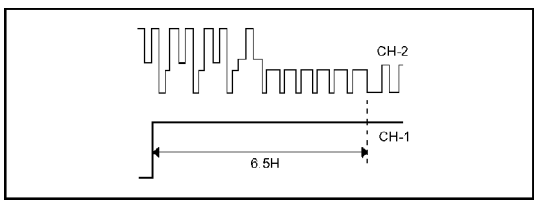


Fig. 2-1-B



13.2.2. RF AGC

1. Receive the VHF LOW (63 ± 1dB).

2. Connect the digital voltmeter between the pin 5 of CP602 and the pin 1 (GND) of CP602.
3. Activate the adjustment mode display of Fig. 1-1 and press the channel button (02) on the remote control to select "RF AGC".
4. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.9 ± 0.15V.

13.2.3. VCO FREERUN

1. Place the set with Aging Test for more than 10 minutes.
2. Connect the digital voltmeter between the pin 7 of CP602 and the pin 1 (GND) of CP602.
3. Activate the adjustment mode display of Fig. 1-1 and press the channel button (03) on the remote control to select "VIF VCO".
4. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.5 ± 0.5V.

(TV SECTION)

13.2.4. CONSTANT VOLTAGE

1. Input DC12V to DC Jack and turn the Power ON.
2. Connect the digital voltmeter to the R544 and GND.
3. Set condition is AV MODE without signal.
4. Adjust the VR501 until the DC voltage is 101 ± 0.5V.
5. Input AC120V to AC cord and remove the DC Jack cord. Check if the Power is ON before doing the above procedure.
6. Adjust the VR502 until the AC voltage is 102 ± 0.5V.

13.2.5. CUT OFF

1. Adjust the unit to the following settings.
   R.DRIVE=64, B.DRIVE=64, R.CUT OFF=128, G.CUT OFF=128, B.CUT OFF=128, SUB BRIGHT=128, SUB CONTRAST=96.
2. Place the set with Aging Test for more than 15 minutes.
3. Set condition is AV MODE without signal.

4. Activate the adjustment mode display of Fig. 1-1 and press the channel button (01) on the remote control to select "CUT OFF".
5. Adjust the Screen Volume until a dim raster is obtained.

13.2.6. FOCUS

1. Receive the monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the Focus Volume until picture is distinct.

13.2.7. WHITE BALANCE

NOTE:
Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of Fig. 1-1 and press the channel button (10) on the remote control to select "R CUT OFF".
5. Press the CH. UP/DOWN button on the remote control to select the "R CUT OFF", "G CUT OFF", "B CUT OFF", "R DRIVE" or "G DRIVE".
6. Adjust the VOL. UP/DOWN button on the remote control to whiten the R CUT OFF, G CUT OFF, B CUT OFF, R DRIVE, and G DRIVE at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white color is looked like a white.

13.2.8. SUB BRIGHTNESS

1. Receive the black pattern*. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Activate the adjustment mode display of Fig. 1-1 and press the channel button (13) on the remote control to select

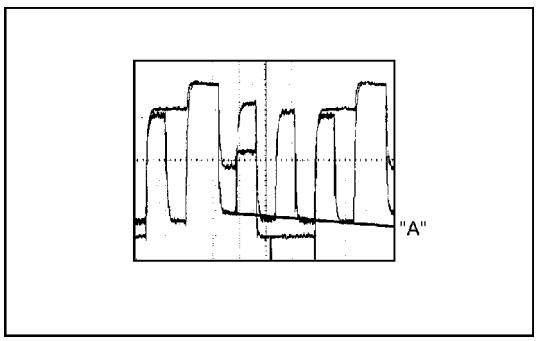
"BRIGHTNESS".

4. Press the VOL. UP/DOWN button on the remote control until the screen begin to shine.
5. Receive the black pattern*. (Audio Video Input)
6. Press the INPUT button on the remote control to set to the AV mode. Then perform the above adjustments 2~4.
   *The Black Pattern means the whole black raster signal.Select the "RASTER" of the pattern generator, set to the OFF position for each R, G and B.

13.2.9. SUB TINT

1. Receive the color bar pattern. (RF Input)
2. Connect the oscilloscope to TP803.
3. Using the remote control, set the brightness, contranst, color and tint to normal position.
4. Activate the adjustment mode display of Fig. 1-1 and press the channel button (16) on the remote control to select "TINT".
5. Press the VOL. UP/DOWN button on the remote control until the section "A" becomes a straight line. (Refer to Fig. 2-2.)
6. Receive the color bar pattern. (Audio Video Input)
7. Press the INPUT button on the remote control to set to the AV mode. Then perform the above adjustments 2~5.

Fig. 2-2

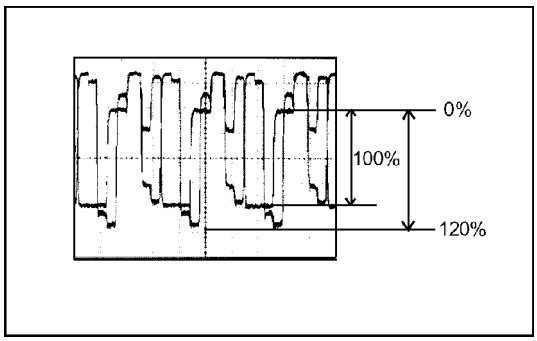


13.2.10. SUB COLOR

1. Receive the color bar pattern. (RF Input)
2. Connect the oscilloscope to TP801.

3. Using the remote control, set the brightness, contranst, color and tint to normal position.
4. Activate the adjustment mode display of Fig. 1-1 and press the channel button (15) on the remote control to select "COLOR".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
6. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 120 ±10% of the white level. (Refer to Fig. 2-3)
7. Receive the color bar pattern. (Audio Video Input)
8. Press the INPUT button on the remote control to set to the AV mode. Then perform the above adjustments 2~6.

Fig. 2-3



13.2.11. SUB CONTRAST

1. Activate the adjustment mode display of Fig. 1-1 and press the channel button (14) on the remote control to select "CONTRAST".
2. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "96".
3. Receive a broadcast and check if the picture is normal.
4. Press the INPUT button on the remote control to set to the AV mode. Then perform the above adjustments 1~3.

13.2.12. HORIZONTAL PHASE

1. Receive the monoscope pattern.
2. Activate the adjustment mode display of Fig. 1-1 and press the

channel button (05) on the remote control to select "H PHASE".

3. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

13.2.13. VERTICAL SHIFT

1. Receive the monoscope pattern.
2. Activate the adjustment mode display of Fig. 1-1 and press the channel button (07) on the remote control to select "V SHIFT".
3. Check if the step No. of V. SHIFT is "01".
4. Adjust the VR402 until the horizontal line becomes fit to notch of the shadow mask.

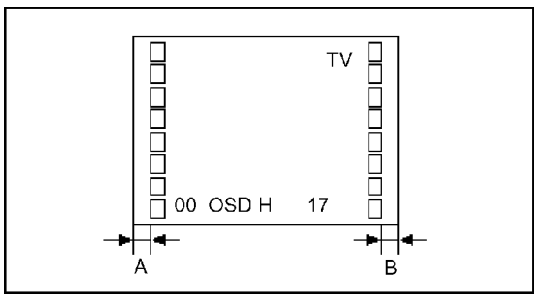
13.2.14. VERTICAL SIZE

1. Receive the monoscope pattern.
2. Activate the adjustment mode display of Fig. 1-1 and press the channel button (06) on the remote control to select "V SIZE".
3. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.
4. Receive a broadcast and check if the picture is normal.

13.2.15. OSD HORIZONTAL

1. Activate the adjustment mode display of Fig. 1-1 .
2. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum. (Refer to Fig. 2-4)

Fig. 2-4



13.2.16. SUB SHARPNESS

1. Activate the adjustment mode display of Fig. 1-1 and press the

channel button (17) on the remote control to select "SHARPNESS".

2. Check if the step No. of SHARPNESS is "40".
3. Press the INPUT button on the remote control to set to the AV mode. Then perform the above adjustments 1~2.

13.2.17. H VCO

1. Activate the adjustment mode display of Fig. 1-1 and press the channel button (04) on the remote control to select "H VCO".
2. Check if the step No. of H VCO is "04".

13.3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

13.3.1. STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. (Refer to Fig. 3-1)
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

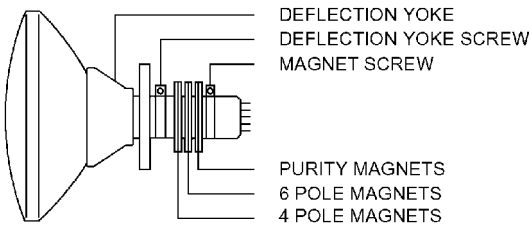
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

13.3.2. PURITY

NOTE
Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen. Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

Fig. 3-1



13.3.3. STATIC CONVERGENCE

NOTE
Adjust after performing adjustments in section 3-2.

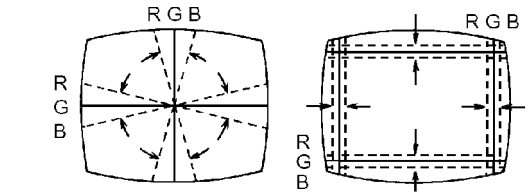
1. Receive the crosshatch pattern from color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

13.3.4. DYNAMIC CONVERGENCE

NOTE
Adjust after performing adjustments in section 3-3.

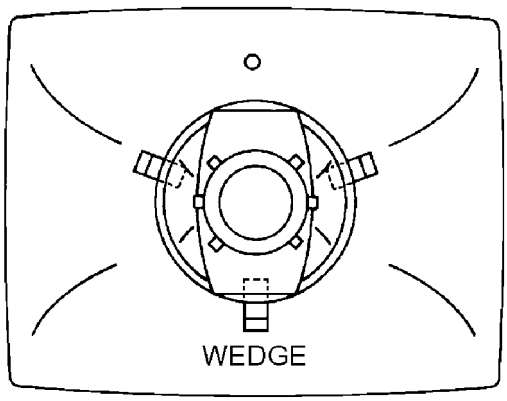
1. **Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. (Refer to Fig. 3-2-a)**
2. **Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. (Refer to Fig. 3-2-b)**

Fig. 3-2-a



UPWARD/DOWNWARD SLANT RIGHT/LEFT SLANT

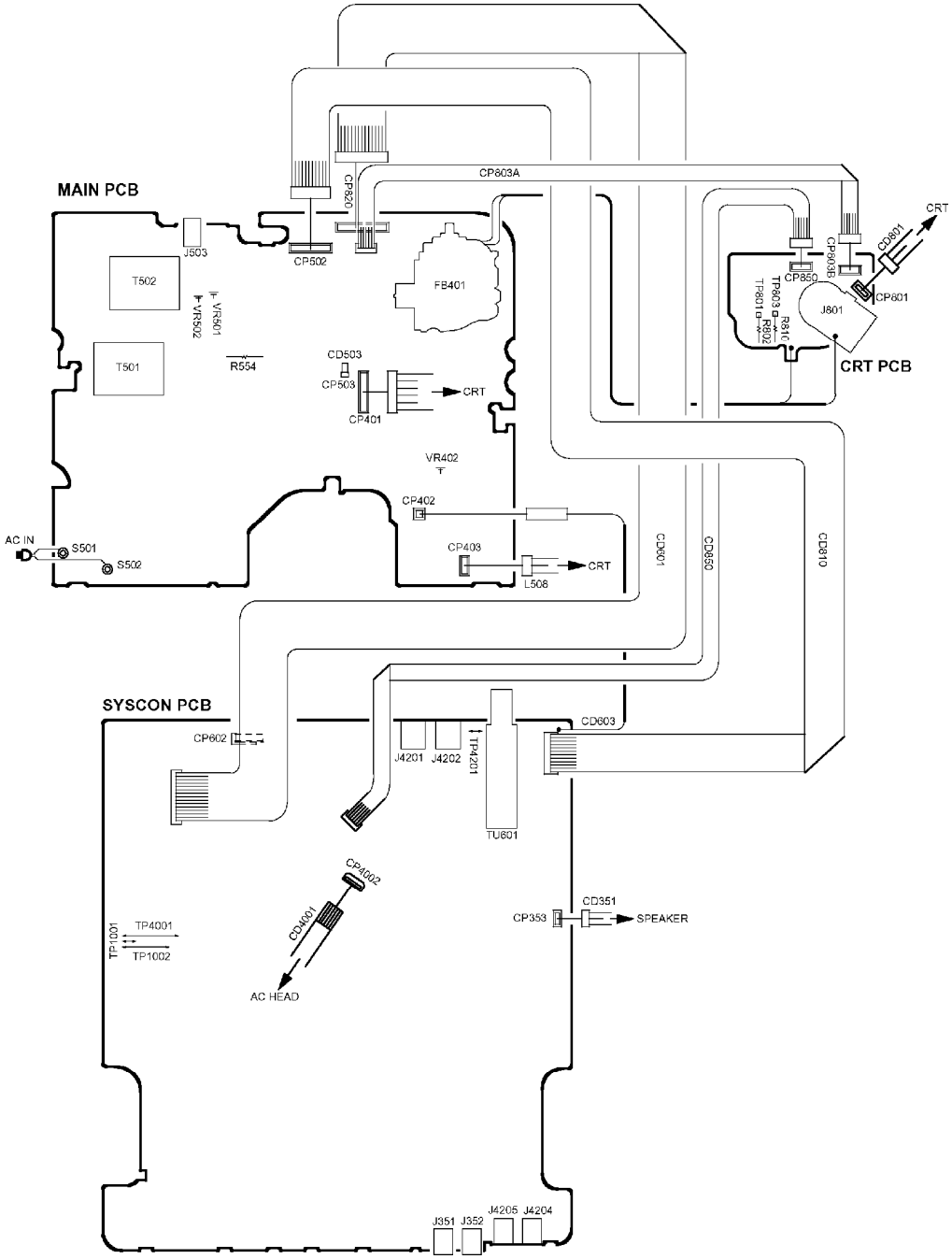
Fig. 3-2-b



WEDGE POSITION

13.4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)

Fig. D3-5



14. BLOCK DIAGRAMS

14.1. TV BLOCK DIAGRAM

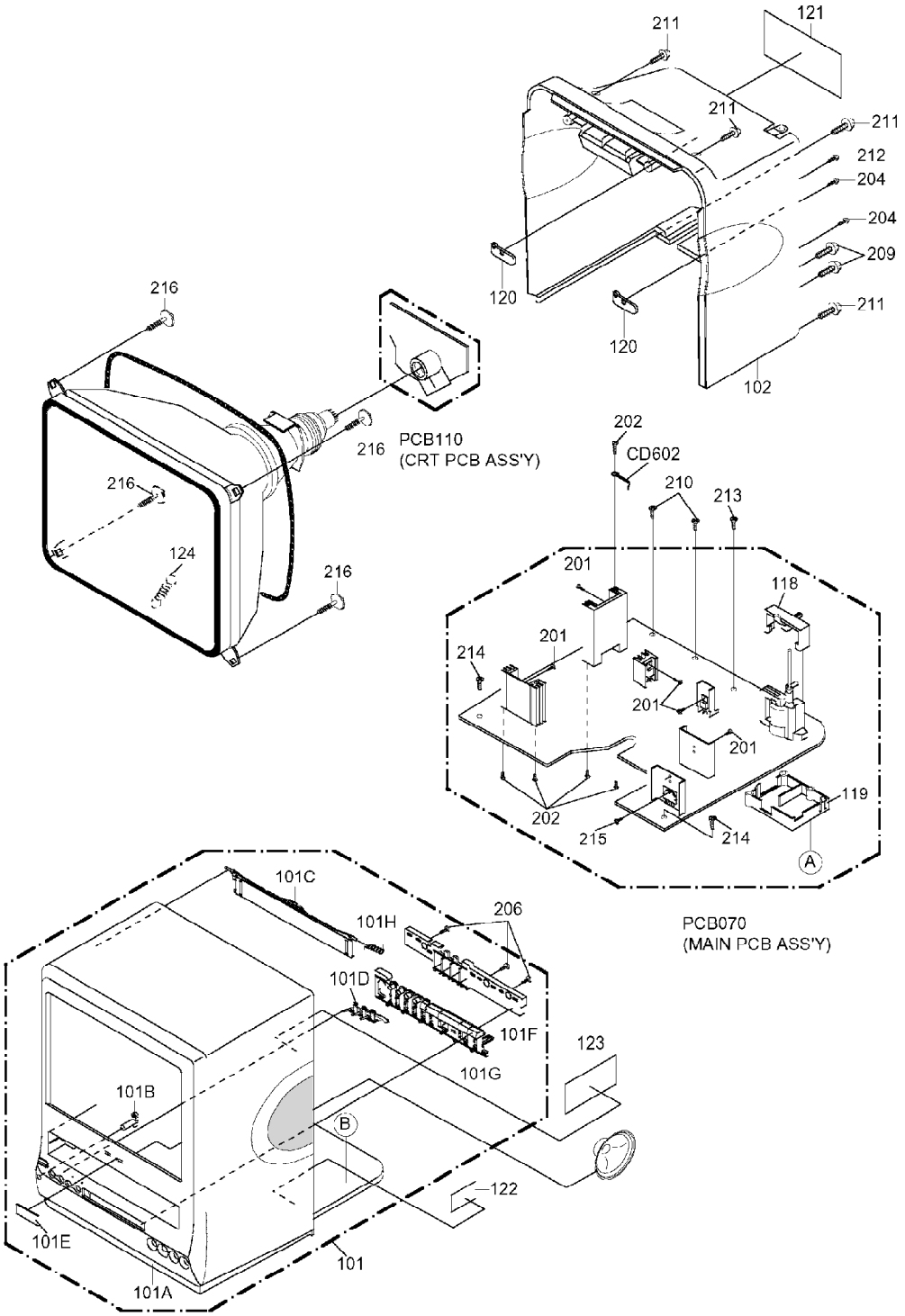
14.2. Y/ C/ AUDIO/ HEAD AMP BLOCK DIAGRAM

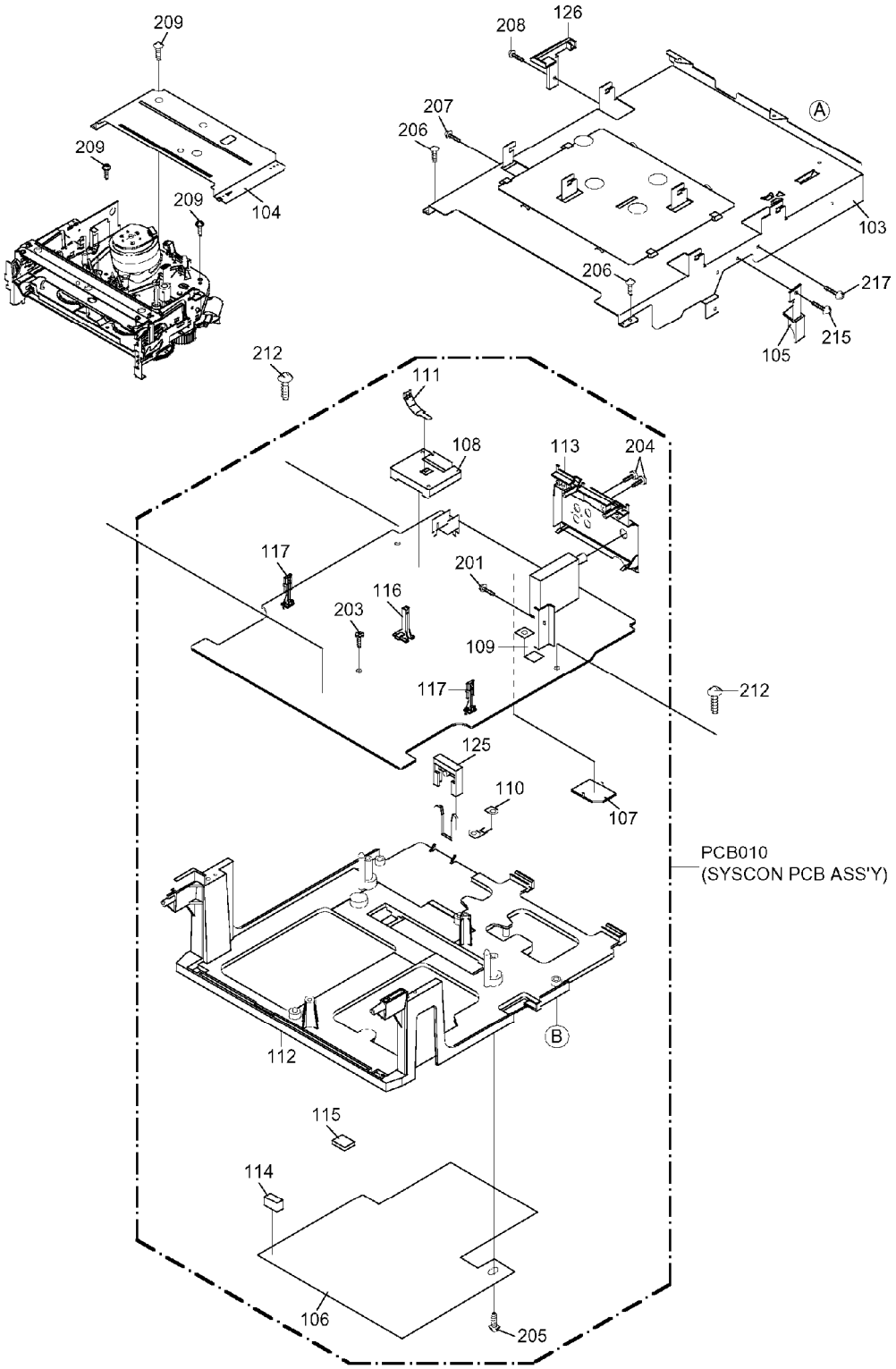
14.3. MICON/ IN/ OUT BLOCK DIAGRAM

15. PRINTED CIRCUIT BOARDS

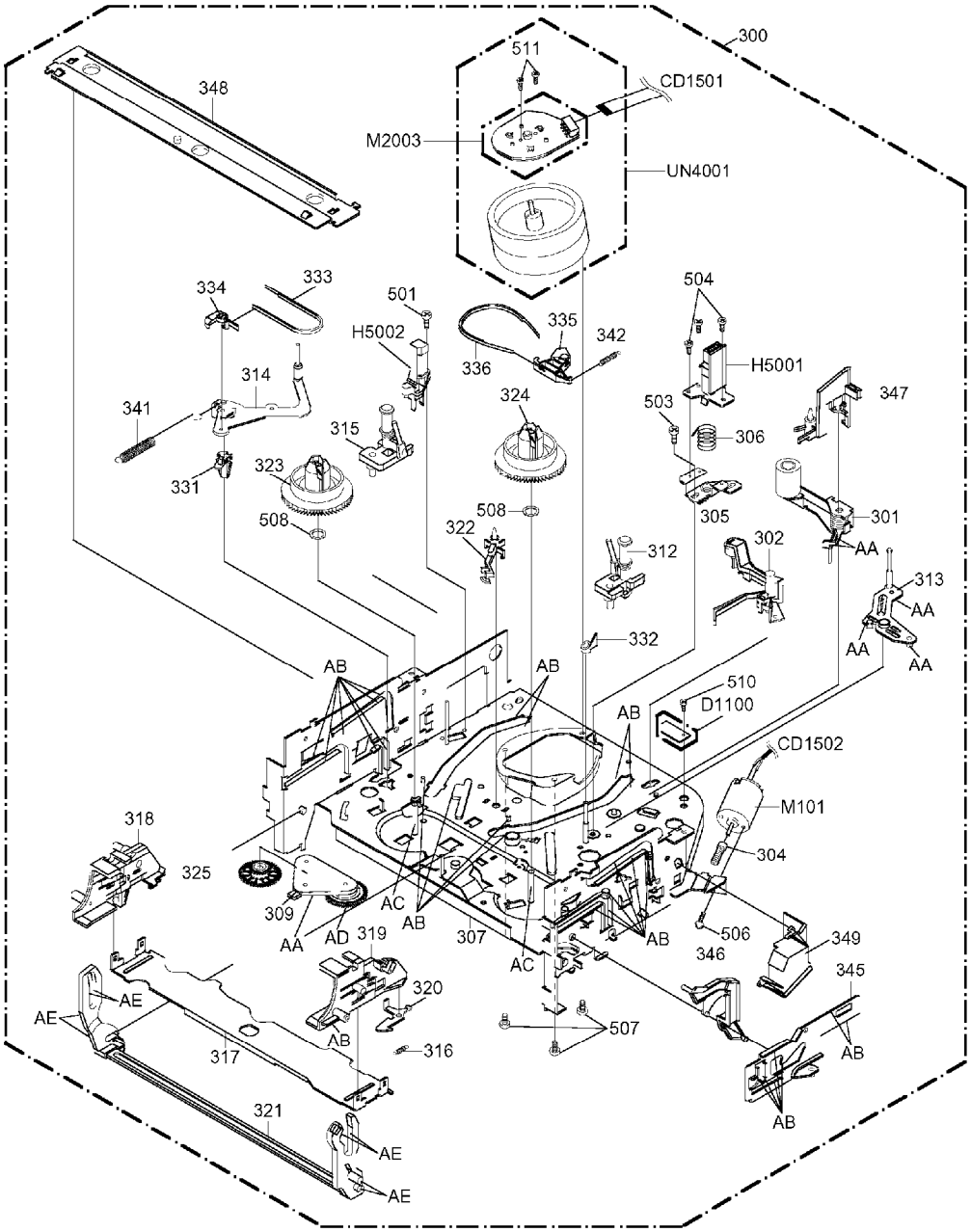
15.1. MAIN/ CRT PRINTED CIRCUIT BOARD

15.2. SYSCON (INSERTED PARTS) PRINTED CIRCUIT BOARD
15.3. SYSCON (CHIP MOUNTED PARTS) PRINTED CIRCUIT BOARD
16. SCHEMATIC DIAGRAMS
16.1. Y/ C/ AUDIO/ HEAD AMP SCHEMATIC DIAGRAM
16.2. MICON SCHEMATIC DIAGRAM
16.3. POWER SCHEMATIC DIAGRAM
16.4. IN/ OUT SCHEMATIC DIAGRAM
16.5. CHROMA/ IF SCHEMATIC DIAGRAM
16.6. SOUND AMP SCHEMATIC DIAGRAM
16.7. TV POWER SCHEMATIC DIAGRAM
16.8. DEFLECTION SCHEMATIC DIAGRAM
16.9. CRT SCHEMATIC DIAGRAM
16.10. INTERCONNECTION DIAGRAM
17. WAVEFORMS
18. EXPLODED VIEWS
18.1. MECHANICAL EXPLODED VIEW


211
121
211
211
212
204
204
209
211
120
120
102
216
216
216
124
216
PCB110
(CRT PCB ASS'Y)
202
CD602
210
213
201
118
201
214
201
201
201
202
215
214
119
A
PCB070
(MAIN PCB ASS'Y)
101C
101H
206
101D
101F
123
101G
101B
B
122
101E
101
101A



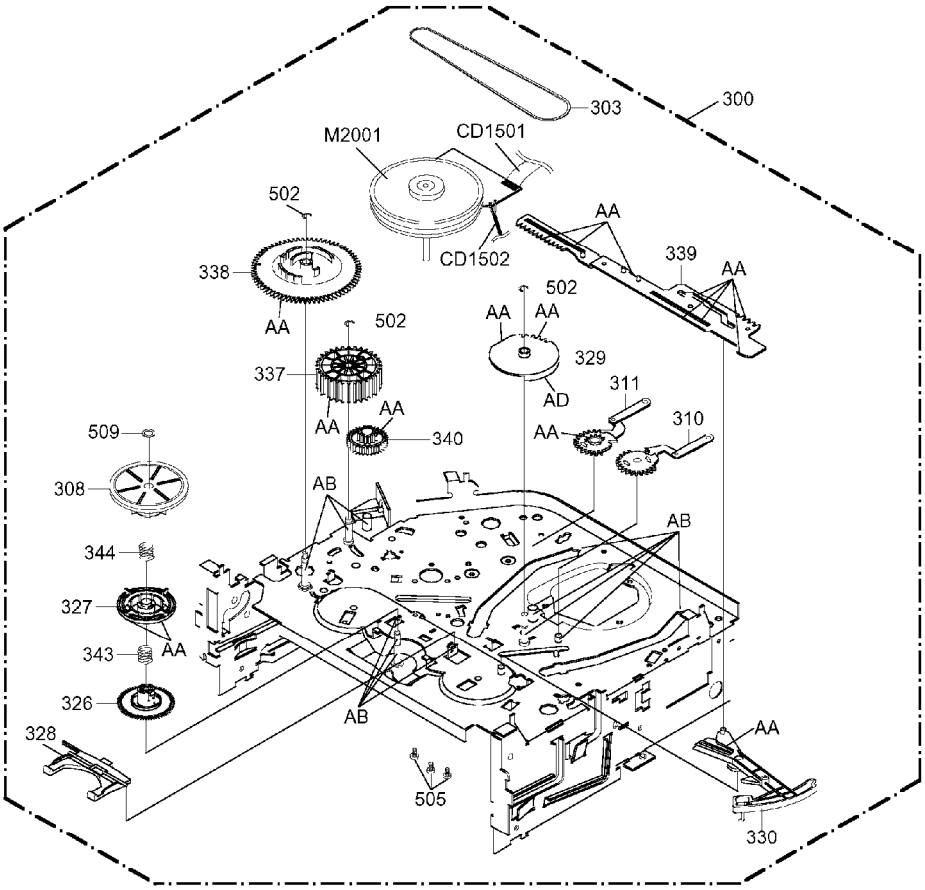
18.2. CHASSIS EXPLODED VIEW (TOP VIEW)



CLASS	PART NO.	PART NAME	MARK
GREASE	Y315061000	G-555G	AA
	Y315071000	MG-33	AB
	Y31D011000	FG-84M	AC
	Y315041000	FL-721	AD
	Y315141000	G-313Y	AE

NOTE: Applying positions AA, AB, AC, AD and AE for the grease are displayed for this section. Check if the correct grease is applied for each position.

18.3. CHASSIS EXPLODED VIEW (BOTTOM VIEW)



CLASS	PART NO.	PART NAME	MARK
GREASE	Y315061000	G-555G	AA
	Y315071000	MG-33	AB
	Y31D011000	FG-84M	AC
	Y315041000	FL-721	AD
	Y315141000	G-313Y	AE

NOTE: Applying positions AA, AB, AC, AD and AE for the grease are displayed for this section. Check if the correct grease is applied for each position.

19. REPLACEMENT PARTS LISTS

19.1. MECHANICAL REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Remarks
	PART NO.	DESCRIPTION	
101	A5B023B720	CABINET, FRONT ASSY	
101A	701WPJC204	CABINET, FRONT	
101B	711WPA0190	GUIDE, REMOCON	
101C	712WPJB775	FLAP	
101D	713WPA0280	GLASS, LED	
101E	7235760006	BRAND, BADGE	
101F	735WPA0757	STOPPER, BUTTON	
101G	735WPJA781	BUTTON, FRAME	
101H	743WKA0037	SPRING, FLAP	
102	A5B023B740	CABINET, BACK ASSY	
103	752WSA0251	PLATE, DECK SHIELD	
104	752WSA0263	SHIELD, COVER DECK	
105	755WPAA012	PLATE, COVER LIGHT (L)	
106	752WSAA028	SHIELD, BOTTOM	
107	752WSAA033	SHIELD, IC	
108	752WSA0230	SHIELD, CASE HEAD AMP	
109	753WSA0118	PLATE, EARTH-SYSCON	
110	753WSA0144	PLATE, BOTTOM-EARTH	
111	753WUAA006	SPRING, EARTH HEAD AMP	
112	761WPA0230	HOLDER, DECK	
113	771WPA0255	PLATE, JACK	
114	800WFA0037	CUSHION 15x5xT=6	
115	800WFA0038	CUSHION 10x10xT=2	
116	85OP700037	HOLDER, LED	
117	85OP700038	HOLDER, END SENSOR	
118	761WPAA064	COVER, FBT	
119	761WPA0223	HOLDER, FBT	
120	713WPA0290	PLATE, COVER	
121	722576A018	SHEET, RATING	
122	7230006755	SHEET, CAUTION	
123	7260000330	SHEET, CRT SERVICEMAN	
124	741WUA0002	SPRING, EARTH	
125	761WPA0231	HOLDER, BUSH	
126	761WPA0232	HOLDER, M/PCB	
201	8109I30A04	SCREW, TAP TITE(B) WH7 3x10	
202	8109630802	SCREW TAP TITE(B) BRAZIER 3x8	
203	8110330804	SCREW,TAP TITE(P) FLAT 3x8	
204	8110630A04	SCREW TAP TITE(P) BRAZIER 3x10	
205	8110630604	SCREW TAP TITE(P) BRAZIER 3x6	
206	8110630804	SCREW TAP TITE(P) BRAZIER 3x8	
207	8107226604	SCREW, TAP TITE(S) BIND 2.6x6	
208	8107230804	SCREW, TAP TITE(S) BIND 3x8	
209	8110630A24	SCREW TAP TITE(P) BRAZIER 3x12	
210	8107930604	SCREW, CUP(S) 3x6	
211	8117540A64	SCREW TAPPING(B0) TRUSS 4x16	
212	8117540B04	SCREW TAPPING(B0) TRUSS 4x20	
213	8107630B04	SCREW TAP TITE(S) BRAZIER 3x20	

Ref. No.	Part No.	Description	Remarks
214	8107630604	SCREW TAP TITE(S) BRAZIER 3x6	
215	8107630804	SCREW TAP TITE(S) BRAZIER 3x8	
216	8141J40B84	SCREW TAP TITE(P) GW15 4x28	
217	8107230604	SCREW, TAP TITE(S) BIND 3x6	
---	725000A055	SHEET, CAR CORD	
---	7250000542	TAG, CAR CORD	
---	791WHA0107	LAMIFILM, BAG	
---	792WHA0458	PACKAGE, TOP	
---	792WHA0459	PACKAGE, BOTTOM	
---	793WCDB730	GIFT BOX	
---	A5B023B975	INSTRUCTION BOOK KIT	
---	JA5U0400	POLY BAG(RED CAUTION)INSTRUCTION	
---	J5B02301A	INSTRUCTION BOOK	
---	J5B02317A	REGISTRATION CARD	
---	J5B02329A	INFORMATION SHEET	
---	J5B02399A	CORRECTION SHEET	

19.2. CHASSIS REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Remarks
300	A5B005I420A	DECK ASSY A5B005I420A	
301	85OA400234	PINCH ROLLER BLOCK	
302	85OA500026	AHC ASS'Y	
303	85OP200290	BELT, CAPSTAN (S)	
304	85OP600581	WORM	
305	85OP500083	BASE, AC HEAD	
306	85OP800324	SPRING, AC HEAD	
307	85OA000459	MAIN CHASSIS ASS'Y	
308	85OA200089	CLUTCH ASS'Y	
309	85OA200090	ARM IDLER ASS'Y	
310	85OA300065	LOADING ARM S UNIT	
311	85OA300066	LOADING ARM T UNIT	
312	85OA400223	INCLINED BASE T UINT 3S	
313	85OA400232	P5 ARM ASS'Y 2	
314	85OA400235	TENSION ARM ASS'Y 2	
315	85OA400231	INCLINED BASE S UNIT	
316	85OP800367	SPRING LOCKER	
317	85OP900736	CASS, HOLDER	
318	85OP900748	CASS, SIDE L	
319	85OP900749	CASS, SIDE R	
320	85OP900739	LOCKER, R	
321	85OA900228	LINK UNIT	
322	85OP000496	POST, CASS GUIDE	
323	85OP200316	REEL, S (S)	
324	85OP200317	REEL, T (S)	
325	85OP200308	GEAR, IDLER	
326	85OP200311	GEAR, CLUTCH	
327	85OP200312	GEAR, COUPLING	

Ref. No.	Part No.	Part Name & Description	Remarks
328	85OP200313	LEVER, CLUTCH	
329	85OP300194	GEAR, MAIN LOADING	
330	85OP400490	LEVER, TENSION	
331	85OP400492	HOLDER, TENSION	
332	85OP400520	CAP.P4	
333	85OP400542	BAND, TENSION	
334	85OP400533	CONNECT, TENSION	
335	85OP600573	ARM, BRAKE T	
336	85OP600584	BAND, BRAKE T	
337	85OP600577	CAM, PINCH ROLLER	
338	85OP600578	CAM, MAIN	
339	85OP600579	ROD, MAIN	
340	85OP600582	GEAR, JOINT	
341	85OP800322	SPRING, TENSION	
342	85OP800360	SPRING, BRAKE T	
343	85OP800355	SPRING, COUPLING	
344	85OP800356	SPRING, RING	
345	85OP900750	LEVER, LINK 2	
346	85OP900744	LEVER, FLAP	
347	85OP900745	CASS, OPENER	
348	85OP900746	BRACKET, TOP 3V	
349	85OP700039	COVER, BOT	
501	8107226804	SCREW TAP TITE(S) BIND 2.6x8	
502	83ETW30000	E-RING 3.0	
503	8107226404	SCREW TAP TITE(S) BIND 2.6x4	
504	8102120604	SCREW, PAN M2x6	
505	8109126604	SCREW, TAP TITE(B) PAN 2.6x6	
506	810A130404	SCREW/WASHER(A) M3x4	
507	810A126504	SCREW/WASHER(A) M2.6x5	
508	82Q264713N	POLYSLIDER WASHER 2.6x4.7xT0.13	
509	82P184505N	POLYSLIDER WASHER(CUT) 1.8x4.5xT0.5	
510	8107226604	SCREW TAP TITE(S) BIND 2.6x6	
511	810A123504	SEMS A M2.3x5.0	
CD1501	122H071603	CORD JUMPER SMCD-7X151	
CD1502	122Y021902	CORD JUMPER 2Y021902	
D1100	DAK0000170	DEW SENSORCW/ AL PLATE HDP-05-26	
H5001	1523D91034	HEAD (AUDIO CONTROL) HVMXA1072A	
H5002	1543D02013	HEAD (FULL ERASE) HVFHP0032A	
M101	1596P98001	MOTOR (LOADING) MXN13FB12K3	⚠
	1596S98001	MOTOR (LOADING) MDB2B66	
M2001	1510S98036	CAPSTAN DD UNIT F2QVB08	⚠
M2003	1589S11014	MICRO MOTOR I2OAL03	⚠
UN4001	A4E104A500	CYLINDER UNIT ASS'Y A4E104A500	⚠

19.3. ELECTRICAL REPLACEMENT PARTS LIST

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS
CC.....CERAMIC CAPACITOR
CE.....ALUMI ELECTROLYTIC CAPACITOR
CP.....POLYESTER CAPACITOR
CPP.....POLYPROPYLENE CAPACITOR
CPL.....PLASTIC CAPACITOR
CMP.....METAL POLYESTER CAPACITOR
CMPL.....METAL PLASTIC CAPACITOR
CMPP.....METAL POLYPROPYLENE CAPACITOR

Ref. No.	Part No.	Part Name & Description	Remarks
		RESISTORS	
R301	R002T2560J	RC 56 OHM 1/2W	
R351	R002T4392J	RC 3.9K OHM 1/4W	
R352	R903N8822J	RC 8.2K OHM 1/8W	
R353	R002T4683J	RC 68K OHM 1/4W	
R359	R903N8473J	RC 47K OHM 1/8W	
R360	R002T2560J	RC 56 OHM 1/2W	
R361	R002T2560J	RC 56 OHM 1/2W	
R362	R002T2560J	RC 56 OHM 1/2W	
R401	R002T4103J	RC 10K OHM 1/4W	
R403	R002T4272J	RC 2.7K OHM 1/4W	
R404	R4X5T6152F	R, METAL 1.5K OHM 1/6W	⚠
R405	R002T4391J	RC 390 OHM 1/4W	
R407	R002T4391J	RC 390 OHM 1/4W	
R408	R002T4391J	RC 390 OHM 1/4W	
R409	R3X181271J	R, METAL OXIDE 270 OHM 1W	⚠
R411	R002T4113J	RC 11K OHM 1/4W	
R412	R002T4103J	RC 10K OHM 1/4W	
R413	R002T4123J	RC 12K OHM 1/4W	
R414	R002T4122J	RC 1.2K OHM 1/4W	
R416	R002T4103J	RC 10K OHM 1/4W	
R417	R002T2471J	RC 470 OHM 1/2W	
R418	R4X5T41R5F	R, METAL 1.5 OHM 1/4W	
R419	R002T2561J	RC 560 OHM 1/2W	
R420	R002T2562J	RC 5.6K OHM 1/2W	
R421	R002T2122J	RC 1.2K OHM 1/2W	
R422	R002T4392J	RC 3.9K OHM 1/4W	
R423	R002T4682J	RC 6.8K OHM 1/4W	
R424	R002T4222J	RC 2.2K OHM 1/4W	
R425	R002T2224J	RC 220K OHM 1/2W	
R426	R002T4562J	RC 5.6K OHM 1/4W	
R430	R002T4273J	RC 27K OHM 1/4W	
R431	R002T4471J	RC 470 OHM 1/4W	
R432	R655U2010J	R, FUSE 1 OHM 1/2W	⚠
R439	R4X5T6273F	R, METAL 27K OHM 1/6W	⚠
R440	R4X5T6822F	R, METAL 8.2K OHM 1/6W	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
R441	R4X5T6104F	R, METAL 100K OHM 1/6W	⚠
R442	R4X5T6123F	R, METAL 12K OHM 1/6W	⚠
R443	R4X5T6183F	R, METAL 18K OHM 1/6W	⚠
R444	R4X5T6272F	R, METAL 2.7K OHM 1/6W	
R447	R65582151J	R, FUSE 150 OHM 1/2W	⚠
R450	R65581100J	R, FUSE 10 OHM 1W	⚠
R454	R002T4224J	RC 220K OHM 1/4W	
R456	R002T2471J	RC 470 OHM 1/2W	
R460	R002T4101J	RC 100 OHM 1/4W	
R490	R002T4473J	RC 47K OHM 1/4W	
R500	R0G3K2275K	RC 2.7M OHM 1/2W	⚠
R501	R5Y2CD010J	R, CEMENT 1 OHM 5W	⚠
R502	R3X28B100J	R, METAL OXIDE 10 OHM 3W	⚠
R503	R002T2563J	RC 56K OHM 1/2W	
R504	R002T4182J	RC 1.8K OHM 1/4W	
R505	R002T2563J	RC 56K OHM 1/2W	⚠
R506	R002T4103J	RC 10K OHM 1/4W	
R507	R002T4334J	RC 330K OHM 1/4W	
R508	R002T4123J	RC 12K OHM 1/4W	
R509	R002T4471J	RC 470 OHM 1/4W	
R511	R002T4105J	RC 1M OHM 1/4W	⚠
R513	R002T4102J	RC 1K OHM 1/4W	
R515	R002T4823J	RC 82K OHM 1/4W	
R517	R002T4102J	RC 1K OHM 1/4W	
R518	R002T4101J	RC 100 OHM 1/4W	
R519	R002T4331J	RC 330 OHM 1/4W	
R520	R002T4102J	RC 1K OHM 1/4W	
R521	R002T4822J	RC 8.2K OHM 1/4W	
R522	R002T4823J	RC 82K OHM 1/4W	
R523	R002T4332J	RC 3.3K OHM 1/4W	
R524	R002T4100J	RC 10 OHM 1/4W	
R525	R002T4182J	RC 1.8K OHM 1/4W	
R527	R002T4102J	RC 1K OHM 1/4W	
R528	R63581R22J	R, FUSE 0.22 OHM 1W	⚠
R529	R002T4272J	RC 2.7K OHM 1/4W	⚠
R530	R3X181R22J	R, METAL OXIDE 0.22 OHM 1W	⚠
R532	R002T4391J	RC 390 OHM 1/4W	
R533	R002T4101J	RC 100 OHM 1/4W	
R534	R002T4153J	RC 15K OHM 1/4W	
R535	R002T4105J	RC 1M OHM 1/4W	
R536	R002T4682J	RC 6.8K OHM 1/4W	
R538	R002T4223J	RC 22K OHM 1/4W	
R539	R002T4102J	RC 1K OHM 1/4W	
R540	R002T4473J	RC 47K OHM 1/4W	
R541	R002T4103J	RC 10K OHM 1/4W	
R542	R002T4101J	RC 100 OHM 1/4W	
R544	R3X18A1R2J	R, METAL OXIDE 1.2 OHM 2W	⚠
R545	R3X181331J	R, METAL OXIDE 330 OHM 1W	⚠
R546	R002T4103J	RC 10K OHM 1/4W	

Ref. No.	Part No.	Part Name & Description	Remarks
R547	R3X28B6R8J	R, METAL OXIDE 6.8 OHM 3W	⚠
R548	R002T4220J	RC 22 OHM 1/4W	
R549	R002T4221J	RC 220 OHM 1/4W	
R550	R002T4822J	RC 8.2K OHM 1/4W	
R553	R002T4123J	RC 12K OHM 1/4W	
R554	R002T4273J	RC 27K OHM 1/4W	
R555	R002T4823J	RC 82K OHM 1/4W	
R556	R002T4332J	RC 3.3K OHM 1/4W	
R601	R002T4222J	RC 2.2K OHM 1/4W	
R602	R903N8221J	RC 220 OHM 1/8W	
R603	R903N8221J	RC 220 OHM 1/8W	
R605	R903N8223J	RC 22K OHM 1/8W	
R607	R002T2221J	RC 220 OHM 1/2W	
R608	R903N8103J	RC 10K OHM 1/8W	
R609	R903N8681J	RC 680 OHM 1/8W	
R611	R903N8103J	RC 10K OHM 1/8W	
R612	R002T4562J	RC 5.6K OHM 1/4W	
R614	R903N8394J	RC 390K OHM 1/8W	
R616	R903N8221J	RC 220 OHM 1/8W	
R617	R903N8154J	RC 150K OHM 1/8W	
R618	R801R7106J	RC 10M OHM 1/10W	
R620	R903N8101J	RC 100 OHM 1/8W	
R622	R903N8221J	RC 220 OHM 1/8W	
R623	R903N8472J	RC 4.7K OHM 1/8W	
R624	R903N8202J	RC 2K OHM 1/8W	
R625	R903N8103J	RC 10K OHM 1/8W	
R626	R002T4103J	RC 10K OHM 1/4W	
R628	R002T2470J	RC 47 OHM 1/2W	
R629	R903N8391J	RC 390 OHM 1/8W	
R630	R002T4101J	RC 100 OHM 1/4W	
R631	R903N8682J	RC 6.8K OHM 1/8W	
R632	R903N8222J	RC 2.2K OHM 1/8W	
R633	R903N8822J	RC 8.2K OHM 1/8W	
R634	R903N8101J	RC 100 OHM 1/8W	
R635	R903N8101J	RC 100 OHM 1/8W	
R636	R903N8101J	RC 100 OHM 1/8W	
R638	R002T4154J	RC 150K OHM 1/4W	
R639	R002T4151J	RC 150 OHM 1/4W	
R642	R903N8103J	RC 10K OHM 1/8W	
R643	R903N8473J	RC 47K OHM 1/8W	
R644	R903N8103J	RC 10K OHM 1/8W	
R646	R903N8104J	RC 100K OHM 1/8W	
R647	R903N8222J	RC 2.2K OHM 1/8W	
R648	R903N8222J	RC 2.2K OHM 1/8W	
R650	R903N8561J	RC 560 OHM 1/8W	
R651	R903N8471J	RC 470 OHM 1/8W	
R655	R903N8101J	RC 100 OHM 1/8W	
R656	R903N8102J	RC 1K OHM 1/8W	
R657	R903N8102J	RC 1K OHM 1/8W	
R658	R903N8222J	RC 2.2K OHM 1/8W	
R659	R903N8222J	RC 2.2K OHM 1/8W	
R660	R903N8222J	RC 2.2K OHM 1/8W	
R662	R903N8102J	RC 1K OHM 1/8W	
R665	R002T4155J	RC 1.5M OHM 1/4W	

Ref. No.	Part No.	Part Name & Description	Remarks
R667	R002T4221J	RC 220 OHM 1/4W	
R668	R903N8473J	RC 47K OHM 1/8W	
R669	R002T4221J	RC 220 OHM 1/4W	
R672	R903N8471J	RC 470 OHM 1/8W	
R673	R903N8222J	RC 2.2K OHM 1/8W	
R674	R002T4182J	RC 1.8K OHM 1/4W	
R677	R903N8102J	RC 1K OHM 1/8W	
R680	R002T4222J	RC 2.2K OHM 1/4W	
R681	R002T4222J	RC 2.2K OHM 1/4W	
R682	R002T4222J	RC 2.2K OHM 1/4W	
R802	R3X181153J	R, METAL OXIDE 15K OHM 1W	⚠
R805	R3X181153J	R, METAL OXIDE 15K OHM 1W	⚠
R807	R002T2272J	RC 2.7K OHM 1/2W	
R808	R002T2272J	RC 2.7K OHM 1/2W	
R810	R3X181153J	R, METAL OXIDE 15K OHM 1W	⚠
R811	R002T4471J	RC 470 OHM 1/4W	
R812	R002T4471J	RC 470 OHM 1/4W	
R813	R002T4471J	RC 470 OHM 1/4W	
R814	R002T4222J	RC 2.2K OHM 1/4W	
R815	R002T4222J	RC 2.2K OHM 1/4W	
R816	R002T4222J	RC 2.2K OHM 1/4W	
R820	R002T2272J	RC 2.7K OHM 1/2W	
R821	R002T4471J	RC 470 OHM 1/4W	
R1001	R002T4332J	RC 3.3K OHM 1/4W	
R1003	R903N8334J	RC 330K OHM 1/8W	
R1007	R903N8681J	RC 680 OHM 1/8W	
R1008	R903N8102J	RC 1K OHM 1/8W	
R1009	R903N8561J	RC 560 OHM 1/8W	
R1010	R002T4332J	RC 3.3K OHM 1/4W	
R1011	R903N8334J	RC 330K OHM 1/8W	
R1012	R903N8103J	RC 10K OHM 1/8W	
R1013	R903N8561J	RC 560 OHM 1/8W	
R1014	R903N8473J	RC 47K OHM 1/8W	
R1015	R903N8103J	RC 10K OHM 1/8W	
R1016	R002T4271J	RC 270 OHM 1/4W	
R1017	R903N8393J	RC 39K OHM 1/8W	
R1018	R903N8472J	RC 4.7K OHM 1/8W	
R1019	R903N8473J	RC 47K OHM 1/8W	
R1020	R903N8223J	RC 22K OHM 1/8W	
R1021	R903N8681J	RC 680 OHM 1/8W	
R1025	R903N8472J	RC 4.7K OHM 1/8W	
R1028	R903N8223J	RC 22K OHM 1/8W	
R1029	R903N8472J	RC 4.7K OHM 1/8W	
R1031	R903N8102J	RC 1K OHM 1/8W	
R1032	R903N8473J	RC 47K OHM 1/8W	
R1033	R903N8102J	RC 1K OHM 1/8W	
R1034	R903N8564J	RC 560K OHM 1/8W	
R1035	R903N8681J	RC 680 OHM 1/8W	
R1036	R903N8332J	RC 3.3K OHM 1/8W	
R1038	R903N8101J	RC 100 OHM 1/8W	
R1039	R002T4472J	RC 4.7K OHM 1/4W	
R1040	R002T4333J	RC 33K OHM 1/4W	
R1042	R002T4472J	RC 4.7K OHM 1/4W	

Ref. No.	Part No.	Part Name & Description	Remarks
R1046	R002T4472J	RC 4.7K OHM 1/4W	
R1047	R903N8472J	RC 4.7K OHM 1/8W	
R1048	R903N8472J	RC 4.7K OHM 1/8W	
R1049	R903N8472J	RC 4.7K OHM 1/8W	
R1050	R903N8101J	RC 100 OHM 1/8W	
R1051	R903N8183J	RC 18K OHM 1/8W	
R1052	R002T4391J	RC 390 OHM 1/4W	
R1053	R903N8221J	RC 220 OHM 1/8W	
R1054	R002T4562J	RC 5.6K OHM 1/4W	
R1056	R002T4103J	RC 10K OHM 1/4W	
R1057	R903N8101J	RC 100 OHM 1/8W	
R1058	R903N8564J	RC 560K OHM 1/8W	
R1059	R903N8154J	RC 150K OHM 1/8W	
R1062	R903N8332J	RC 3.3K OHM 1/8W	
R1063	R903N8332J	RC 3.3K OHM 1/8W	
R1064	R002T4102J	RC 1K OHM 1/4W	
R1066	R002T2102J	RC 1K OHM 1/2W	
R1078	R903N8394J	RC 390K OHM 1/8W	
R1083	R903N8333J	RC 33K OHM 1/8W	
R1087	R903N8333J	RC 33K OHM 1/8W	
R3001	R903N8103J	RC 10K OHM 1/8W	
R3002	R002T2561J	RC 560 OHM 1/2W	
R3007	R002T4390J	RC 39 OHM 1/4W	
R3008	R002T4101J	RC 100 OHM 1/4W	
R3009	R002T4101J	RC 100 OHM 1/4W	
R4001	R903N8561J	RC 560 OHM 1/8W	
R4002	R903N8103J	RC 10K OHM 1/8W	
R4003	R903N8103J	RC 10K OHM 1/8W	
R4004	R002T4150J	RC 15 OHM 1/4W	
R4007	R903N8393J	RC 39K OHM 1/8W	
R4010	R903N8332J	RC 3.3K OHM 1/8W	
R4011	R903N8223J	RC 22K OHM 1/8W	
R4012	R903N8821J	RC 820 OHM 1/8W	
R4014	R903N8391J	RC 390 OHM 1/8W	
R4015	R002T42R2J	RC 2.2 OHM 1/4W	
R4017	R903N8682J	RC 6.8K OHM 1/8W	
R4018	R903N8103J	RC 10K OHM 1/8W	
R4019	R903N8334J	RC 330K OHM 1/8W	
R4020	R002T4181J	RC 180 OHM 1/4W	
R4021	R903N8223J	RC 22K OHM 1/8W	
R4022	R903N8821J	RC 820 OHM 1/8W	
R4023	R002T4333J	RC 33K OHM 1/4W	
R4024	R002T4562J	RC 5.6K OHM 1/4W	
R4025	R903N8182J	RC 1.8K OHM 1/8W	
R4026	R903N8393J	RC 39K OHM 1/8W	
R4028	R002T4473J	RC 47K OHM 1/4W	
R4029	R903N8473J	RC 47K OHM 1/8W	
R4032	R903N8101J	RC 100 OHM 1/8W	
R4033	R903N8222J	RC 2.2K OHM 1/8W	
R4034	R002T4683J	RC 68K OHM 1/4W	
R4035	R903N8104J	RC 100K OHM 1/8W	
R4038	R903N8684J	RC 680K OHM 1/8W	
R4039	R903N8822J	RC 8.2K OHM 1/8W	
R4041	R903N8182J	RC 1.8K OHM 1/8W	

Ref. No.	Part No.	Part Name & Description	Remarks
R4042	R903N8821J	RC 820 OHM 1/8W	
R4043	R903N8332J	RC 3.3K OHM 1/8W	
R4045	R002T4123J	RC 12K OHM 1/4W	
R4047	R903N8123J	RC 12K OHM 1/8W	
R4048	R002T4680J	RC 68 OHM 1/4W	
R4052	R002T4562J	RC 5.6K OHM 1/4W	
R4054	R903N8183J	RC 18K OHM 1/8W	
R4055	R903N8102J	RC 1K OHM 1/8W	
R4056	R801R7106J	RC 10M OHM 1/10W	
R4057	R903N8682J	RC 6.8K OHM 1/8W	
R4058	R903N8472J	RC 4.7K OHM 1/8W	
R4059	R801R7106J	RC 10M OHM 1/10W	
R4060	R801R7155J	RC 1.5M OHM 1/10W	
R4061	R801R7106J	RC 10M OHM 1/10W	
R4062	R801R7335J	RC 3.3M OHM 1/10W	
R4064	R903N8682J	RC 6.8K OHM 1/8W	
R4068	R801R7225J	RC 2.2M OHM 1/10W	
R4072	R903N8472J	RC 4.7K OHM 1/8W	
R4201	R903N8750J	RC 75 OHM 1/8W	
R4203	R903N8101J	RC 100 OHM 1/8W	
R4204	R903N8102J	RC 1K OHM 1/8W	
R4207	R903N8152J	RC 1.5K OHM 1/8W	
R4208	R903N8102J	RC 1K OHM 1/8W	
R4210	R903N8102J	RC 1K OHM 1/8W	
R4211	R903N8562J	RC 5.6K OHM 1/8W	
R4212	R903N8750J	RC 75 OHM 1/8W	
R4213	R903N8750J	RC 75 OHM 1/8W	
R4214	R903N8272J	RC 2.7K OHM 1/8W	
R4215	R903N8152J	RC 1.5K OHM 1/8W	
R4216	R903N8102J	RC 1K OHM 1/8W	
R4217	R903N8102J	RC 1K OHM 1/8W	
R4218	R903N8271J	RC 270 OHM 1/8W	
R4219	R903N8271J	RC 270 OHM 1/8W	
R4220	R903N8271J	RC 270 OHM 1/8W	
R4222	R002T4472J	RC 4.7K OHM 1/4W	
R4223	R903N8473J	RC 47K OHM 1/8W	
R4224	R00204101J	RC 100 OHM 1/4W	
	R002T4101J	RC 100 OHM 1/4W	
R4232	R903N8103J	RC 10K OHM 1/8W	
R4236	R903N8102J	RC 1K OHM 1/8W	
R4238	R903N8330J	RC 33 OHM 1/8W	
R4239	R002T2221J	RC 220 OHM 1/2W	
R4243	R903N8222J	RC 2.2K OHM 1/8W	
R4244	R903N8102J	RC 1K OHM 1/8W	
R4245	R002T4473J	RC 47K OHM 1/4W	
		CAPACITORS	
C351	E50HU52R2M	CE 2.2 UF 50V	
C354	E0EL02332M	CE 3300 UF 16V	
C355	E50HU2100M	CE 10 UF 16V	
C356	E02LU2470M	CE 47 UF 16V	
C360	CS0RB0414K	CC 0.01 UF 50V B	
C362	E00NU2470M	CE 47 UF 16 V	

Ref. No.	Part No.	Part Name & Description	Remarks
C363	E50HU53R3M	CE 3.3 UF 50V	
C364	E50HU53R3M	CE 3.3 UF 50V	
C365	E50HU53R3M	CE 3.3 UF 50V	
C366	E50HU53R3M	CE 3.3 UF 50V	
C367	E00NU2470M	CE 47 UF 16 V	
C368	CS0RF0415Z	CC 0.1 UF 50V F	
C369	CS0RCH4H2J	CC 220 PF 50V CH	
C402	E5EZTD100M	CE 10 UF 250V	⚠
C403	E02LU5100M	CE 10 UF 50V	
C405	E02LU53R3M	CE 3.3 UF 50V	
C406	E5EZU4101M	CE 100 UF 35V	⚠
C407	E02LF3102M	CE 1000 UF 25V	⚠
C409	P235W1103J	CMP 0.01 UF 100V MKT	
C410	E02LU5010M	CE 1 UF 50V	
C414	P21503475K	CMP 4.7 UF 250V ECQ-E	
C416	C0JTSL5H1J	CC 22 PF 500V SL	
C417	P235W1103J	CMP 0.01 UF 100V MKT	
C418	E5EZU5220M	CE 22 UF 50V	
C419	C03L0R7U2K	CC 680 PF 2KV R	⚠
C421	E5EZ04102M	CE 1000 UF 35V	⚠
C422	E5EZTD010M	CE 1 UF 250V	⚠
C423	P447F2274J	CMPP 0.27 UF 200V FHS	⚠
C424	P4N8FJ682H	CMPP 0.0068UF 1.25KV	⚠
C425	C03L0R7Q2K	CC 470 PF 2KV R	⚠
C426	C03L0R713K	CC 0.001 UF 2KV R	
C427	C0JTSL5Q1J	CC 47 PF 500V SL	
C429	P235W1224J	CMP 0.22 UF 100V MKT	
C430	C03L0R713K	CC 0.001 UF 2KV R	
C432	E5EZT50R1M	CE 0.1 UF 50V	
C433	E02LU8220M	CE 22 UF 100V	⚠
C502	C0JBB05H3K	CC 0.0022UF 500V B	⚠
C503	C0JBB05H3K	CC 0.0022UF 500V B	⚠
C504	E5EZU5220M	CE 22 UF 50V	
C505	P2472B224M	CMP 0.22UF 275V PHE840	⚠
C506	CQGTB04L3K	CC 0.0033UF 50V B	
C507	E51CGC331M	CE 330 UF 200V	⚠
C508	P1S3T0222J	CP 0.0022UF 50V	
C509	P232T0224J	CMPL 0.22 UF 50V MMTV	
C510	CQGTB04H3K	CC 0.0022UF 50V B	
C511	P235W1334J	CMP 0.33 UF 100V MKT	
C512	CQGTB0414K	CC 0.01 UF 50V B	
C513	C03L0R713K	CC 0.001 UF 2KV R	
C514	P235W1104J	CMP 0.1 UF 100V MKT	
C515	E62FF3152M	CE 1500 UF 25V	
C516	P235W1103J	CMP 0.01 UF 100V MKT	
C517	CQGTB04S3K	CC 0.0056UF 50V B	
C518	C03L0R7H3K	CC 0.0022UF 2KV R	
C522	E5EZU5100M	CE 10 UF 50V	
C523	CB3930MQ3M	CC 0.0047UF 250V	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
C525	C03L0R7Q2K	CC 470 PF 2KV R	
C526	E02LU5470M	CE 47 UF 50V	
C527	E02LT5101M	CE 100 UF 50V	
C529	E5EZT1471M	CE 470 UF 10V	
C530	C0JTB05Q2K	CC 470 PF 500V B	
C531	C0JTB05Q2K	CC 470 PF 500V B	
C532	C0JTB05Q2K	CC 470 PF 500V B	
C533	C0JTB05Q2K	CC 470 PF 500V B	
C534	E61SFB101M	CE 100 UF 160V	⚠
C535	E5EZF2222M	CE 2200 UF 16V	
C536	E5EZT3471M	CE 470 UF 25V	⚠
C537	E5EZF3102M	CE 1000 UF 25V	⚠
C538	E02LU5470M	CE 47 UF 50V	⚠
C539	E5EZTB3R3M	CE 3.3 UF 160V	
C540	E02LU50R1M	CE 0.1 UF 50V	⚠
C541	C0JTB05Q2K	CC 470 PF 500V B	
C542	C0JTB05Q2K	CC 470 PF 500V B	
C544	E5EZF3102M	CE 1000 UF 25V	
C546	C03L0R7H3K	CC 0.0022UF 2KV R	
C551	E62FF3152M	CE 1500 UF 25V	
C555	CQGTB04H4K	CC 0.022 UF 50V B	
C601	E50HU5010M	CE 1 UF 50V	
C602	CS0RF0415Z	CC 0.1 UF 50V F	
C604	CS0RCH412J	CC 100 PF 50V CH	
C605	CS0RCH412J	CC 100 PF 50V CH	
C609	CS0RB0414K	CC 0.01 UF 50V B	
C610	E50HU52R2M	CE 2.2 UF 50V	
C612	E02LU0221M	CE 220 UF 6.3V	
C613	CS0RF0415Z	CC 0.1 UF 50V F	
C614	CS0RF0414Z	CC 0.01 UF 50V F	
C615	CS0RCH413J	CC 0.001 UF 50V CH	
C616	CS0RB0414K	CC 0.01 UF 50V B	
C618	CS0RCH4L2J	CC 330 PF 50V CH	
C620	E50HU0470M	CE 47 UF 6.3V	
C621	CS0RF0414Z	CC 0.01 UF 50V F	
C622	CS0RB03H5K	CC 0.22 UF 25V B	
C623	CS0RB04Q3K	CC 0.0047UF 50V B	
C624	E02LU2470M	CE 47 UF 16V	
C625	CS0RB04H4K	CC 0.022 UF 50V B	
C627	CS0RB0216K	CC 1 UF 16V B	
C628	CS0RB0414K	CC 0.01 UF 50V B	
C631	CS0RF0216Z	CC 1 UF 16V F	
C632	E50HU52R2M	CE 2.2 UF 50V	
C634	CS0RF0414Z	CC 0.01 UF 50V F	
C636	CS0RF0414Z	CC 0.01 UF 50V F	
C637	CQGTF0415Z	CC 0.1 UF 50V F	
C639	CS0RF0414Z	CC 0.01 UF 50V F	
C640	CS0RB0315K	CC 0.1 UF 25V B	
C641	E02LT1102M	CE 1000 UF 10V	
C645	E50HU5010M	CE 1 UF 50V	
C647	CS0RF0414Z	CC 0.01 UF 50V F	
C648	E50HU5010M	CE 1 UF 50V	

Ref. No.	Part No.	Part Name & Description	Remarks
C649	E50HU5010M	CE 1 UF 50V	
C650	CS0RB04E4K	CC 0.015 UF 50V B	
C653	CS0RF0414Z	CC 0.01 UF 50V F	
C654	CS0KCH4G1J	CC 18 PF 50V CH	
C655	E02LU2470M	CE 47 UF 16V	
C657	CS0RB04H4K	CC 0.022 UF 50V B	
C658	CS0RB03H5K	CC 0.22 UF 25V B	
C659	E02LU0101M	CE 100 UF 6.3V	
C660	CS0RF0415Z	CC 0.1 UF 50V F	
C661	CS0RB0414K	CC 0.01 UF 50V B	
C662	CS0RB0414K	CC 0.01 UF 50V B	
C663	CS0RCH4N2J	CC 390 PF 50V CH	
C664	P235WE105J	CMP 1 UF 63V MKT	
C665	E00NU2100M	CE 10 UF 16 V	
C666	CS0RCH412J	CC 100 PF 50V CH	
C667	CS0RB04Q4K	CC 0.047 UF 50V B	
C668	E50HU2220M	CE 22 UF 16 V	
C670	CS0RB0414K	CC 0.01 UF 50V B	
C673	E50HU5010M	CE 1 UF 50V	
C675	E50HU1330M	CE 33 UF 10 V	
C801	C03L0R713K	CC 0.001 UF 2KV R	
C803	E5EZTB220M	CE 22 UF 160V	
C805	CHGTB0412K	CC 100 PF 50V B	
C809	CHGTB04S2J	CC 560 PF 50V B	
C810	CHGTB04U2J	CC 680 PF 50V B	
C811	CHGTB04U2J	CC 680 PF 50V B	
C1003	E5EZT0102M	CE 1000 UF 6.3V	
C1004	CS0KCH411D	CC 10 PF 50V CH	
C1005	CS0RCH4Q1J	CC 47 PF 50V CH	
C1009	CS0RCH4H2J	CC 220 PF 50V CH	
C1010	CS0RCH4H2J	CC 220 PF 50V CH	
C1013	CS0RB04N3K	CC 0.0039UF 50V B	
C1015	E50HU0470M	CE 47 UF 6.3V	
C1016	E50HU2220M	CE 22 UF 16 V	
C1017	CS0RF0415Z	CC 0.1 UF 50V F	
C1018	E50HU54R7M	CE 4.7 UF 50V	
C1019	CS0RCH413J	CC 0.001 UF 50V CH	
C1020	E50HU2100M	CE 10 UF 16V	
C1021	E50HU2100M	CE 10 UF 16V	
C1022	CS0RF0415Z	CC 0.1 UF 50V F	
C1023	CS0RCH4H2J	CC 220 PF 50V CH	
C1024	CS0RF0414Z	CC 0.01 UF 50V F	
C1025	CS0RF0415Z	CC 0.1 UF 50V F	
C1026	CS0RCH412J	CC 100 PF 50V CH	
C1027	CS0RB04N3K	CC 0.0039UF 50V B	
C1028	CS0RF0415Z	CC 0.1 UF 50V F	
C1029	CS0RB04U3K	CC 0.0068UF 50V B	
C1030	CS0RF0415Z	CC 0.1 UF 50V F	
C1031	CS0RB0413K	CC 0.001 UF 50V B	
C1032	CS0RB0413K	CC 0.001 UF 50V B	
C1033	CS0RCH412J	CC 100 PF 50V CH	
C1034	CS0RF0415Z	CC 0.1 UF 50V F	
C1035	CS0RCH4H2J	CC 220 PF 50V CH	
C1038	CS0RCH4U2J	CC 680 PF 50V CH	

Ref. No.	Part No.	Part Name & Description	Remarks
C1039	CS0RCH412J	CC 100 PF 50V CH	
C1040	CS0KCH4G1J	CC 18 PF 50V CH	
C1041	CS0RF0415Z	CC 0.1 UF 50V F	
C1042	CS0RCH412J	CC 100 PF 50V CH	
C1044	CS0RF0414Z	CC 0.01 UF 50V F	
C1045	CS0KCH411D	CC 10 PF 50V CH	
C1046	CS0KCH411D	CC 10 PF 50V CH	
C1047	CS0KCH4G1J	CC 18 PF 50V CH	
C1048	CS0KCH4G1J	CC 18 PF 50V CH	
C1049	CS0KCH4H1J	CC 22 PF 50V CH	
C1050	CS0KCH411D	CC 10 PF 50V CH	
C1051	CS0RCH4H2J	CC 220 PF 50V CH	
C1052	E02LU2470M	CE 47 UF 16V	
C1053	E50HU0101M	CE 100 UF 6.3V	
C1060	CS0RCH412J	CC 100 PF 50V CH	
C1061	CS0RCH412J	CC 100 PF 50V CH	
C1062	CS0RB0216K	CC 1 UF 16V B	
C1064	CS0RB0413K	CC 0.001 UF 50V B	
C1065	CS0RF0415Z	CC 0.1 UF 50V F	
C1067	CS0RF0415Z	CC 0.1 UF 50V F	
C1068	CS0RF0415Z	CC 0.1 UF 50V F	
C1069	CS0RCH412J	CC 100 PF 50V CH	
C1070	CS0RB0216K	CC 1 UF 16V B	
C1072	CS0RB04U2K	CC 680 PF 50V B	
C1074	CS0RF0415Z	CC 0.1 UF 50V F	
C1076	CS0RF0414Z	CC 0.01 UF 50V F	
C1084	CS0RB04H3K	CC 0.0022UF 50V B	
C1085	CS0RCH412J	CC 100 PF 50V CH	
C1090	CS0RB04L3K	CC 0.0033UF 50V B	
C3004	E02LU0221M	CE 220 UF 6.3V	
C3006	E50HU2220M	CE 22 UF 16 V	
C3007	E02LU1221M	CE 220 UF 10V	
C4002	P235W1223J	CMP 0.022 UF 100V MKT	
C4004	E02LU0221M	CE 220 UF 6.3V	
C4005	CS0RF0414Z	CC 0.01 UF 50V F	
C4006	CS0RB04E4K	CC 0.015 UF 50V B	
C4009	E02LU2470M	CE 47 UF 16V	
C4010	E50HU0470M	CE 47 UF 6.3V	
C4012	E50HU0220M	CE 22 UF 6.3V	
C4015	CS0RF04Q4Z	CC 0.047 UF 50V F	
C4016	CS0RB04U4K	CC 0.068 UF 50V B	
C4019	CS0RF04Q4Z	CC 0.047 UF 50V F	
C4020	CS0RF0415Z	CC 0.1 UF 50V F	
C4021	CS0RF0415Z	CC 0.1 UF 50V F	
C4023	E50HU0220M	CE 22 UF 6.3V	
C4024	CS0RF0415Z	CC 0.1 UF 50V F	
C4025	E02LU0221M	CE 220 UF 6.3V	
C4027	E50HU0330M	CE 33 UF 6.3V	
C4028	CS0RF0415Z	CC 0.1 UF 50V F	
C4029	CS0RB0414K	CC 0.01 UF 50V B	
C4030	E50HU2100M	CE 10 UF 16V	
C4031	E50HU53R3M	CE 3.3 UF 50V	
C4032	CS0RB04L3K	CC 0.0033UF 50V B	
C4033	CS0RB04W2K	CC 820 PF 50V B	

Ref. No.	Part No.	Part Name & Description	Remarks
C4034	E50HU54R7M	CE 4.7 UF 50V	
C4035	E50HU5010M	CE 1 UF 50V	
C4036	CS0KB04N2K	CC 390 PF 50V B	
C4037	CS0RF0415Z	CC 0.1 UF 50V F	
C4038	CS0RCH4G2J	CC 180 PF 50V CH	
C4041	CS0RB03H5K	CC 0.22 UF 25V B	
C4042	E50HU0101M	CE 100 UF 6.3V	
C4043	CS0RF0415Z	CC 0.1 UF 50V F	
C4044	CS0RF0415Z	CC 0.1 UF 50V F	
C4045	E50HU0221M	CE 220 UF 6.3V	
C4046	E50HU53R3M	CE 3.3 UF 50V	
C4047	E50HU2100M	CE 10 UF 16V	
C4048	E50HU2100M	CE 10 UF 16V	
C4049	E50HU2100M	CE 10 UF 16V	
C4050	E50HU52R2M	CE 2.2 UF 50V	
C4051	E50HU0330M	CE 33 UF 6.3V	
C4052	E50HU54R7M	CE 4.7 UF 50V	
C4053	E50HU54R7M	CE 4.7 UF 50V	
C4054	CS0RF0415Z	CC 0.1 UF 50V F	
C4055	CS0RF0216Z	CC 1 UF 16V F	
C4057	E50HU5010M	CE 1 UF 50V	
C4058	E50HU0470M	CE 47 UF 6.3V	
C4059	CS0RF0415Z	CC 0.1 UF 50V F	
C4060	CS0RB0414K	CC 0.01 UF 50V B	
C4061	CS0RF0414Z	CC 0.01 UF 50V F	
C4062	E50HU5010M	CE 1 UF 50V	
C4063	E50HU0470M	CE 47 UF 6.3V	
C4064	CS0RB04H4K	CC 0.022 UF 50V B	
C4065	E50HU5010M	CE 1 UF 50V	
C4066	CS0RB04H4K	CC 0.022 UF 50V B	
C4067	E50HU5010M	CE 1 UF 50V	
C4069	CS0RF0415Z	CC 0.1 UF 50V F	
C4074	CS0RF0414Z	CC 0.01 UF 50V F	
C4075	CS0RCH4H2J	CC 220 PF 50V CH	
C4076	CS0RF0415Z	CC 0.1 UF 50V F	
C4077	E50HU5010M	CE 1 UF 50V	
C4079	CS0RCH412J	CC 100 PF 50V CH	
C4080	CS0RCH4S1J	CC 56 PF 50V CH	
C4203	CS0RCH4Q1J	CC 47 PF 50V CH	
C4209	E50HU2100M	CE 10 UF 16V	
C4211	E02LT2471M	CE 470 UF 16V	
C4212	CS0RB0413K	CC 0.001 UF 50V B	
C4213	E02LU0101M	CE 100 UF 6.3V	
C4214	E50HU54R7M	CE 4.7 UF 50V	
C4215	CS0RF0415Z	CC 0.1 UF 50V F	
C4219	CS0RB04Q4K	CC 0.047 UF 50V B	
C4220	E02LU1101M	CE 100 UF 10V	
C4221	CS0RB0413K	CC 0.001 UF 50V B	
C4241	E50HU2100M	CE 10 UF 16V	
		DIODES	
D401	D2WT011E10	DIODE, SILICON 11E1-EIC	
D402	D2WXN49370	DIODE, SILICON 1N4937	

Ref. No.	Part No.	Part Name & Description	Remarks
D404	D1VT001330	DIODE, SILICON 1SS133T-77	
D405	D1VT001330	DIODE, SILICON 1SS133T-77	
D406	D97U03001B	DIODE, ZENER MTZJ30B T-77	
D407	D97U03001B	DIODE, ZENER MTZJ30B T-77	
D408	D94TA27011	DIODE, ZENER HZ27-1L TD	⚠
D409	D94TA11B13	DIODE, ZENER HZ11B3L TD	⚠
D411	D2WXN49370	DIODE, SILICON 1N4937	⚠
D412	D2WXN49370	DIODE, SILICON 1N4937	⚠
D413	D2WXN49370	DIODE, SILICON 1N4937	⚠
D414	D2WT011E10	DIODE, SILICON 11E1-EIC	
D501	D97U01001B	DIODE, ZENER MTZJ10B T-77	
D502	D1VT001330	DIODE, SILICON 1SS133T-77	
D503	D2WTRM11C0	DIODE, SILICON RM11C-EIC	⚠
D504	D2WTRM11C0	DIODE, SILICON RM11C-EIC	⚠
D505	D94TA27011	DIODE, ZENER HZ27-1L TD	
D506	D230PF6DT0	DIODE, SILICON FEPF6DT	
D507	D97U01801B	DIODE, ZENER MTZJ18B T-77	
D508	D1VT001330	DIODE, SILICON 1SS133T-77	
D509	D2WXRU2AM0	DIODE, SILICON RU2AM-EIC	⚠
D510	D2WXRU2AM0	DIODE, SILICON RU2AM-EIC	⚠
D511	D28TELS6N6	DIODE, RECTIFER 10ELS6N-TA1B2	
D512	D2WT011E10	DIODE, SILICON 11E1-EIC	
D513	D2WT011E10	DIODE, SILICON 11E1-EIC	
D514	D1VT001330	DIODE, SILICON 1SS133T-77	
D515	D97U03301B	DIODE, ZENER MTZJ33B T-77	⚠
D516	D1VT001330	DIODE, SILICON 1SS133T-77	
D517	D1VT001330	DIODE, SILICON 1SS133T-77	
D518	D2WXN49370	DIODE, SILICON 1N4937	
D519	D1VT001330	DIODE, SILICON 1SS133T-77	
D520	D1VT001330	DIODE, SILICON 1SS133T-77	
D521	D2WXB290S0	DIODE, SILICON SB290S	
D522	D97U01601B	DIODE, ZENER MTZJ16B T-77	
D523	D97U06R81B	DIODE, ZENER MTZJ6.8B T-77	
D524	D1VT001330	DIODE, SILICON 1SS133T-77	
D525	D1VT001330	DIODE, SILICON 1SS133T-77	
D526	D1VT001330	DIODE, SILICON 1SS133T-77	
D528	D97U05R61B	DIODE, ZENER MTZJ5.6B T-77	
D530	D1VT001330	DIODE, SILICON 1SS133T-77	
D531	D2WXB290S0	DIODE, SILICON SB290S	⚠
D533	D2WT011E10	DIODE, SILICON 11E1-EIC	
D534	D97U01801B	DIODE, ZENER MTZJ18B T-77	
D535	D2WTRM11C0	DIODE, SILICON RM11C-EIC	⚠
D536	D2WTRM11C0	DIODE, SILICON RM11C-EIC	⚠
D537	D28TELS2N2	DIODE, RECTIFER 10ELS2N-TA1B2	⚠
D539	D2WT011E10	DIODE, SILICON 11E1-EIC	⚠
D540	D2WT011E10	DIODE, SILICON 11E1-EIC	⚠
D541	D2WT011E10	DIODE, SILICON 11E1-EIC	⚠
D542	D28TELS2N2	DIODE, RECTIFER 10ELS2N-TA1B2	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
D545	D2WXB290S0	DIODE, SILICON SB290S	⚠
D546	D1VT001330	DIODE, SILICON 1SS133T-77	
D547	D1VT001330	DIODE, SILICON 1SS133T-77	
D548	D1VT001330	DIODE, SILICON 1SS133T-77	
D550	D97U05R61B	DIODE, ZENER MTZJ5.6B T-77	
D551	D97U02R21B	DIODE, ZENER MTZJ2.2B T-77	
D601	D1VT001330	DIODE, SILICON 1SS133T-77	
D602	D97U08R21B	DIODE, ZENER MTZJ8.2B T-77	
D603	D1VT001330	DIODE, SILICON 1SS133T-77	
D604	D1VT001330	DIODE, SILICON 1SS133T-77	
D605	D2WXN40050	DIODE, SILICON 1N4005-EIC	
D606	D1VT001330	DIODE, SILICON 1SS133T-77	
D608	D97U06R81B	DIODE, ZENER MTZJ6.8B T-77	
D611	D97U09R11B	DIODE, ZENER MTZJ9.1B T-77	
D613	D97U06R81B	DIODE, ZENER MTZJ6.8B T-77	
D614	D97U06R81B	DIODE, ZENER MTZJ6.8B T-77	
D615	D97U06R81B	DIODE, ZENER MTZJ6.8B T-77	
D616	D1VT001330	DIODE, SILICON 1SS133T-77	
D617	D1VT001330	DIODE, SILICON 1SS133T-77	
D618	D1VT001330	DIODE, SILICON 1SS133T-77	
D1001	D1VT001330	DIODE, SILICON 1SS133T-77	
D1002	D1VT001330	DIODE, SILICON 1SS133T-77	
D1003	10100320	INFRARED LED LNA2702L010R	
D1004	D97U05R61C	DIODE, ZENER MTZJ5.6C T-77	
D1005	D2WXSB1400	DIODE, SCHOTTKY SB140-EIC	
D1006	D2WXSB1400	DIODE, SCHOTTKY SB140-EIC	
D1010	D1VT001330	DIODE, SILICON 1SS133T-77	
D3003	D2WXN40050	DIODE, SILICON 1N4005-EIC	
D3005	D2WXN40050	DIODE, SILICON 1N4005-EIC	
D4001	D97U01301B	DIODE, ZENER MTZJ13B T-77	
D4003	D97U01301B	DIODE, ZENER MTZJ13B T-77	
D4201	D97U05R61B	DIODE, ZENER MTZJ5.6B T-77	
D4206	D97U01301B	DIODE, ZENER MTZJ13B T-77	
D4209	D1VT001330	DIODE, SILICON 1SS133T-77	
D4210	D1VT001330	DIODE, SILICON 1SS133T-77	
D4211	21721150	LED SLR-342VCT32	
D4212	21721150	LED SLR-342VCT32	
D4213	21721150	LED SLR-342VCT32	
		ICS	
IC351	I01DP75110	IC AN7511	
IC401	I01TD55220	IC AN5522	⚠
IC501	I1KA97805A	IC KIA7805API	⚠
IC504	I0QD023680	IC NJM2368D	⚠
IC506	0002E00610	PHOTO COUPLER LTV-817M-VB	⚠
IC601	I06FC61206	IC M61206FP	
IC1001	I56F57071B	IC OEC7071B	
IC1003	IC7J0311A0	IC R3111N311A/C-TR	
IC1099	A5B023B015	IC S-24C04BDP-LA	
IC3002	I1KA98R050	IC KIA78R05PI	
IC4001	I03F3205M0	IC LA71205M-MPB	

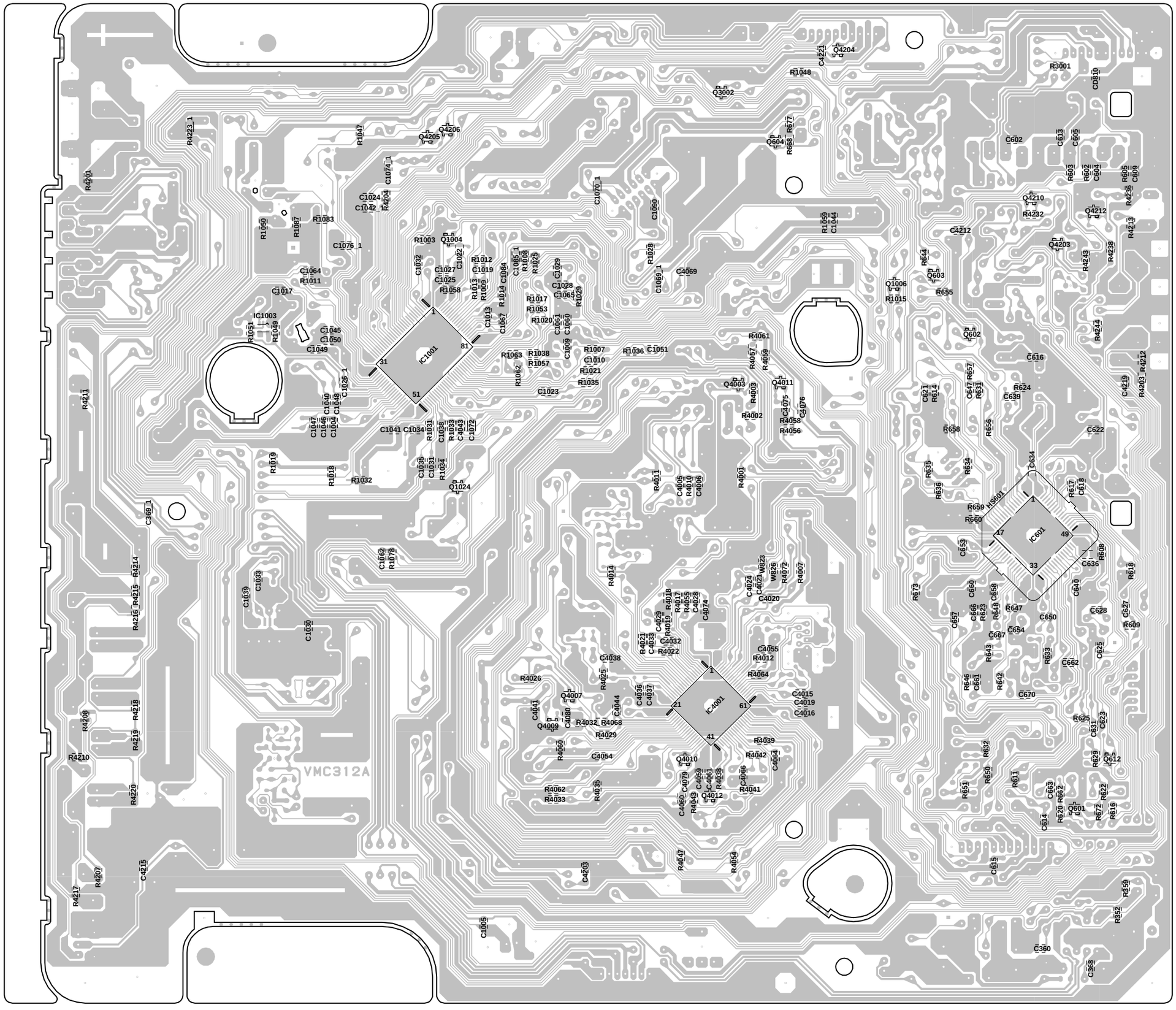
Ref. No.	Part No.	Part Name & Description	Remarks
		TRANSISTORS	
Q401	TPATB03003	COMPOUND TRANSISTOR KRA102MAT	
Q402	TF2002P4M0	THYRISTOR 2P4M	
Q404	TNATJ03003	COMPOUND TRANSISTOR KRC111MAT	
Q405	TC5T01627Y	TRANSISTOR, SILICON 2SC1627_Y(TPE2)	⚠
Q406	TD30026270	TRANSISTOR, SILICON 2SD2627LS-CBC11	⚠
Q407	TPATB03003	COMPOUND TRANSISTOR KRA102MAT	
Q408	TCATC31980	TRANSISTOR, SILICON KTC3198-AT(Y, GR)	
Q501	TCATC31980	TRANSISTOR, SILICON KTC3198-AT(Y, GR)	
Q502	TC5T021204	TRANSISTOR, SILICON 2SC2120Y(TPE2)	
Q503	TNATJ03003	COMPOUND TRANSISTOR KRC111MAT	
Q504	TNATB03005	COMPOUND TRANSISTOR KRC102MAT	
Q505	T410029030	FET 2SK2903-01MR	⚠
Q507	TCATC31980	TRANSISTOR, SILICON KTC3198-AT(Y, GR)	
Q508	TA3T016240	TRANSISTOR, SILICON 2SA1624-AA	⚠
Q509	TCATC31980	TRANSISTOR, SILICON KTC3198-AT(Y, GR)	
Q510	TJXG5NC500	FET STP5NC50FP	
Q511	TCATC31980	TRANSISTOR, SILICON KTC3198-AT(Y, GR)	
Q512	TAAT012714	TRANSISTOR, SILICON KTA1271_Y-AT	
Q514	TNYTB03001	COMPOUND TRANSISTOR DTC114ESTP	
Q515	TNATB03005	COMPOUND TRANSISTOR KRC102MAT	
Q516	TNATJ03003	COMPOUND TRANSISTOR KRC111MAT	
Q517	TAAT012714	TRANSISTOR, SILICON KTA1271_Y-AT	
Q518	TNYTB03001	COMPOUND TRANSISTOR DTC114ESTP	
Q601	T6YJ1037K0	TRANSISTOR, SILICON 2SA1037AKT146R, S	
Q602	TPAAB05001	COMPOUND TRANSISTOR KRA102SRTK	
Q603	T8YJ2412K0	TRANSISTOR, SILICON 2SC2412KT146 R, S	
Q604	T8YJ2412K0	TRANSISTOR, SILICON 2SC2412KT146 R, S	
Q612	T8YJ2412K0	TRANSISTOR, SILICON 2SC2412KT146 R, S	
Q804	TCAT032070	TRANSISTOR, SILICON KTC3207-AT	⚠
Q805	TCAT032070	TRANSISTOR, SILICON KTC3207-AT	⚠
Q806	TCAT032070	TRANSISTOR, SILICON KTC3207-AT	⚠
Q1003	2700680	PHOTO COUPLER RPI-352C40N	
Q1004	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	
Q1005	2700690	PHOTO COUPLER RPI-303	
Q1006	T6YJ1037K0	TRANSISTOR, SILICON 2SA1037AKT146R, S	
Q1008	0000M00390	PHOTO TRANSISTOR ST-304L	
Q1009	2700680	PHOTO COUPLER RPI-352C40N	
Q1013	0000M00390	PHOTO TRANSISTOR ST-304L	
Q1024	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK	
Q3001	TB3T011310	TRANSISTOR, SILICON 2SB1131(S, T)-AE	⚠
Q3002	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK	
Q3005	TDWT00400E	TRANSISTOR, SILICON 2SD400E	
Q3006	TDWT00400E	TRANSISTOR, SILICON 2SD400E	
Q3007	TDWT00400E	TRANSISTOR, SILICON 2SD400E	
Q4001	TCATC31980	TRANSISTOR, SILICON KTC3198-AT(Y, GR)	
Q4002	TCATC31980	TRANSISTOR, SILICON KTC3198-AT(Y, GR)	
Q4003	TPAAC05002	COMPOUND TRANSISTOR KRA103SRTK	
Q4005	TAATA12660	TRANSISTOR, SILICON KTA1266-AT(Y, GR)	

Ref. No.	Part No.	Part Name & Description	Remarks
Q4006	TCAT032034	TRANSISTOR, SILICON KTC3203_Y-AT	
Q4007	T8YJ2412K0	TRANSISTOR, SILICON 2SC2412KT146 R, S	
Q4009	T6YJ1037K0	TRANSISTOR, SILICON 2SA1037AKT146R, S	
Q4010	T6YJ1037K0	TRANSISTOR, SILICON 2SA1037AKT146R, S	
Q4011	T8YJ2412K0	TRANSISTOR, SILICON 2SC2412KT146 R, S	
Q4012	T8YJ2412K0	TRANSISTOR, SILICON 2SC2412KT146 R, S	
Q4203	T8YJ2412K0	TRANSISTOR, SILICON 2SC2412KT146 R, S	
Q4204	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK	
Q4205	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK	
Q4206	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK	
Q4210	T6YJ1037K0	TRANSISTOR, SILICON 2SA1037AKT146R, S	
Q4212	T6YJ1037K0	TRANSISTOR, SILICON 2SA1037AKT146R, S	
		COILS &TRANSFORMERS	
L401	021679472K	COIL 4.7 MH	
L501	029T000092	COIL, LINE FILTER 1R0A103F24	⚠
L503	021767100K	COIL A 10 UH	
L508	028R090008	COIL, DEGAUSS 8R090008	⚠
L602	02167F101J	COIL 100 UH	
L603	02167F470J	COIL 47 UH	
L604	02AHA896A1	CORE, FERRITE W5T18.4X10X9.6	
L607	021LA6220K	COIL 22 UH	
L608	02167F101J	COIL 100 UH	
L613	0216A6R22K	COIL 0.22 UH	
L614	021LA6151K	COIL 150 UH	
L618	331920018	COIL 3192001	
L801	021673101K	COIL 100 UH	
L1001	021LA62R2K	COIL 2.2 UH	
L4001	02167F220J	COIL 22 UH	
L4003	02167F101J	COIL 100 UH	
L4004	02167F220J	COIL 22 UH	
L4005	02167F470J	COIL 47 UH	
L4006	02167F470J	COIL 47 UH	
L4007	326230038	COIL, TRAP 2623003	
L4201	021LA6101K	COIL 100 UH	
L4205	02167F101J	COIL 100 UH	
T401	045009003J	TRANS, HORIZONTAL DRIVE ETH09K14BZ	
T501	481290834	TRANSFORMER, SWITCHING 81290834	⚠
T502	481290824	TRANSFORMER, SWITCHING 81290824	⚠
T4001	031626009R	COIL, BIAS OSC 1626009	
		JACKS	
J351	060J131015	HEADPHONE JACK MSJ-2000	
J352	060J131015	HEADPHONE JACK MSJ-2000	⚠
J503	602602006	JACK DC HEC0824-010010	⚠
J801	066X120014	SOCKET, CATHODE RAY TUBE HPS3200-010501	⚠
J4201	060Q401050	RCA JACK AV2-20D-2	
J4202	060Q401050	RCA JACK AV2-20D-2	
J4204	060Q401076	RCA JACK AV1-09D-4	
J4205	060Q401077	RCA JACK AV1-09D-3	

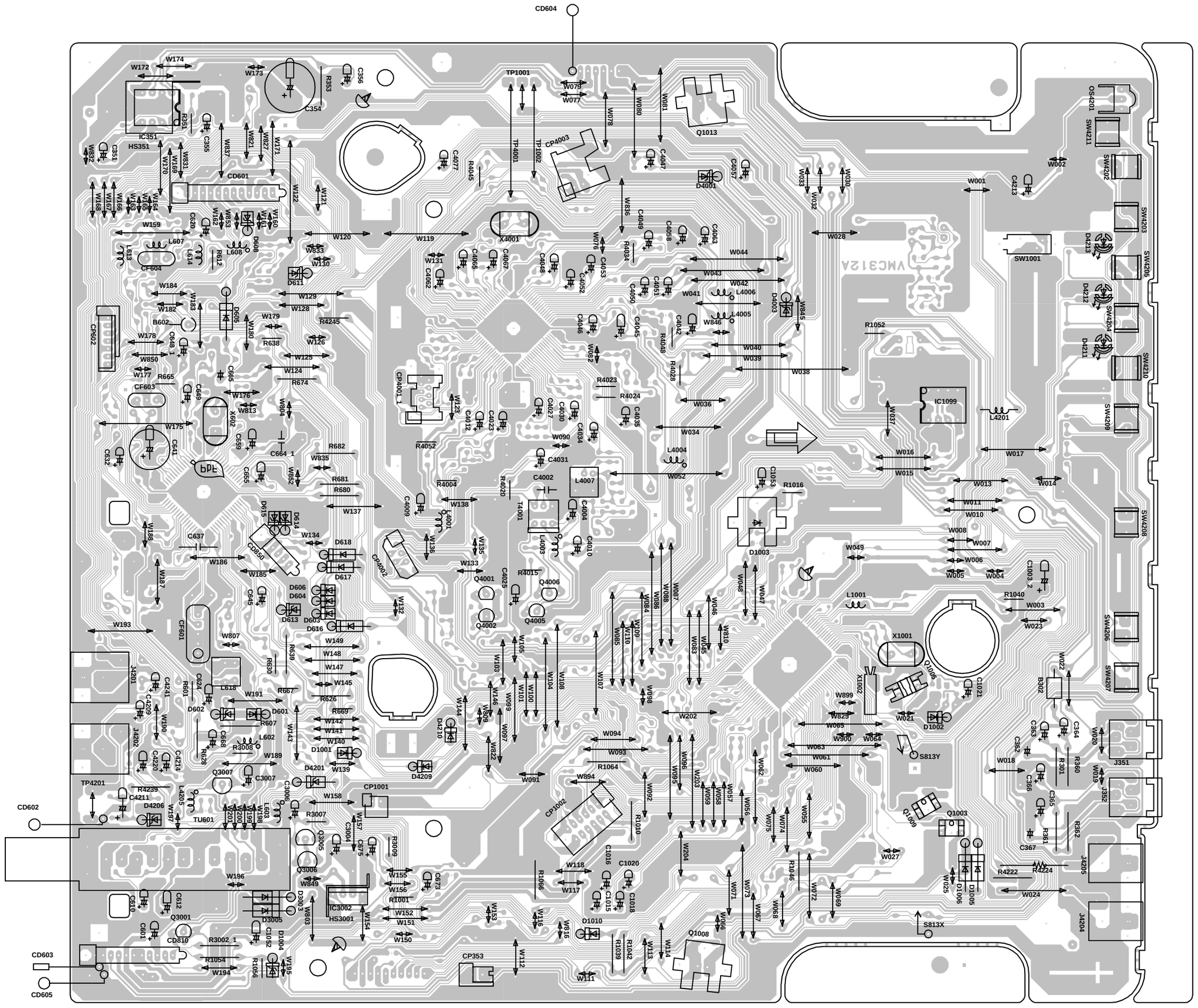
Ref. No.	Part No.	Part Name & Description	Remarks
		SWITCHES	
SW1001	0508A11002	SWITCH(LEAF) MXS01380MPP0	
SW4202	0504101T34	SWITCH, TACT EVQ21505R	
SW4203	0504101T34	SWITCH, TACT EVQ21505R	
SW4204	0504101T34	SWITCH, TACT EVQ21505R	
SW4205	0504101T34	SWITCH, TACT EVQ21505R	
SW4206	0504101T34	SWITCH, TACT EVQ21505R	
SW4207	0504101T34	SWITCH, TACT EVQ21505R	
SW4208	0504101T34	SWITCH, TACT EVQ21505R	
SW4209	0504101T34	SWITCH, TACT EVQ21505R	
SW4210	0504101T34	SWITCH, TACT EVQ21505R	
SW4211	0504101T34	SWITCH, TACT EVQ21505R	
		VARIABLE RESISTORS	
VR402	V1263Q3BT7	VOLUME, SEMI FIXED RH0683CS3R	
VR501	V1K63H3BTE	VOLUME, SEMI FIXED NVG6TLTAB222	
VR502	V1K63Q3BTE	VOLUME, SEMI FIXED NVG6TLTAB472	
		P.C.BOARD ASSEMBLIES	
PCB010	A5B023B010	PCB ASS'Y VMC312A	⚠
PCB070	A5B023B070	PCB ASS'Y TMC583A	⚠
PCB110	A5B023B110	PCB ASS'Y TCC440A	⚠
		MISCELLANEOUS	
ANT001	125C108027	ANTENNA ROD T4-216BNK-BK	
B302	024HT03553	CORE, BEADS W5RH3.5X5X1.0	
B501	024HT03563	CORE, BEADS W4BRH3.5X6X1.0X2	
B502	024HT03553	CORE, BEADS W5RH3.5X5X1.0	
B503	024HT03563	CORE, BEADS W4BRH3.5X6X1.0X2	
B505	024HT03553	CORE, BEADS W5RH3.5X5X1.0	
B507	024HT03553	CORE, BEADS W5RH3.5X5X1.0	
B602	024HT03564	CORE, BEADS W4BRH3.5X6X1.0	
BT101	1411004015	BATTERY, MANGAN R03UPTT/2ST	
BT102	1411004015	BATTERY, MANGAN R03UPTT/2ST	
CD351	06CH12437A	CORD, CONNECTOR CH12437A	
CD501	120R414903	CORD, AC BUSH 0R414903	⚠
CD503	069X620040	CONNECTOR JM-2BK-61	
CD504	121B164101	CORD, CAR BATTERY SI-PC107-67	⚠
CD601	067U012039	WIRE HOLDER B2013H02-12P	
CD601	WKL6028038	FLAT CABLE AWM2468 AWG26 12C BLACK 280MM	
CD602	06CL013002	CORD, CONNECTOR CL013002	
CD603	06CH01423A	CORD, CONNECTOR CH01423A	
CD604	06CH01429A	CORD, EIS CONNECTOR CH01429A	
CD605	06CH01429A	CORD, EIS CONNECTOR CH01429A	
CD801	06CU82039A	CORD, CONNECTOR SM1098-009-1A	
CD803	WDL6017038	FLAT CABLE AWM2468 AWG26 6C BLACK 170MM	
CD810	067U011029	WIRE HOLDER B2013H02-11P	

Ref. No.	Part No.	Part Name & Description	Remarks
CD810	WJL6835038	FLAT CABLE AWM2468 AWG26 11C GRAY 350MM	
CD850	067U005049	WIRE HOLDER B2013H02-5P	
CD850	WCL6834038	FLAT CABLE AWM2468 AWG26 5C GRAY 340MM	
CF601	1022045R72	FILTER, SAW SAFGP45M7VFYZR0B	
CF603	1011T4R504	FILTER, CERAMIC EFCT4R5YS5A	
CF604	1011T4R517	FILTER, CERAMIC EFCT4R5MW5	
CP353	069S120419	CONNECTOR PCB SIDE A2502WV2-2P	
CP401	069X440029	CONNECTOR PCB SIDE B04B-DVS	
CP402	069D01001A	CONNECTOR PCB SIDE 003P-2100	
CP403	069S420110	CONNECTOR PCB SIDE A1561WV2-2P	⚠
CP502	069R2B0589	CONNECTOR PCB SIDE 52147-1110	
CP503	069X620030	CONNECTOR PCB SIDE RE-H022TD-1130	
CP602	069E270129	CONNECTOR PCB SIDE 8283_0712_00_000	
CP801	069S320010	CONNECTOR PCB SIDE A2361WV2-2P	
CP820	069R2C0589	CONNECTOR PCB SIDE 52147-1210	
CP850	069R250589	CONNECTOR PCB SIDE 52147-0510	
CD4001	122F061501	CORD, JUMPER 2F061501	
CP1001	069R220021	CONNECTOR PCB SIDE 52287-0211	
CP1002	06972C0010	CONNECTOR PCB SIDE TMC-J12P-B2	
CP4001	697240600	CONNECTOR PCB SIDE TOC-C04X-B1	
CP4002	069J760599	CONNECTOR PCB SIDE IMSA-9604S-06C	
CP4003	697120320	CONNECTOR PCB SIDE TMC-T02X-E1	
CP803A	067U006049	WIRE HOLDER B2013H02-6P	
CP803B	069R260589	CONNECTOR PCB SIDE 52147-0610	
CUS013	800WFAA008	CUSHION C	
EL001	124116281A	EYE LET XRY16X28BD	
EL002	124120301A	EYE LET XRY20X30BD	
F501	081PC05005	FUSE 51MS050L	⚠
FB401	043210013F	TRANSFORMER, FLYBACK FQI-10B001	⚠
FH501	06710T0006	HOLDER, FUSE EYF-52BC	
FH502	06710T0006	HOLDER, FUSE EYF-52BC	
ICP502	0835C10003	MICRO FUSE 20N_10KFS	⚠
OS4201	077Q037008	REMOTE RECEIVER PIC-37242SR-H	
RY503	0560V10118	RELAY ALKS325	⚠
SP351	070C732002	SPEAKER SG08G26BNB	⚠
TM101	076N0GU010	TRANSMITTER RC-GU010	
TU601	0145K00062	TUNER, VHF-UHF TECC1040PG38W	⚠
V801	981100403	CRT W/DY A22JWG098X80	⚠
X602	100CT3R505	CRYSTAL HC-49/C	
X1001	100CT01207	CRYSTAL HC-49/U-S	
X1002	100DA32R01	CRYSTAL DT-26	
X4001	100CT3R508	CRYSTAL HC-49/U	

20. Schematic Diagram for printing with A4



PV-C923
SYSCON (CHIP MOUNTED PARTS) P.C.B.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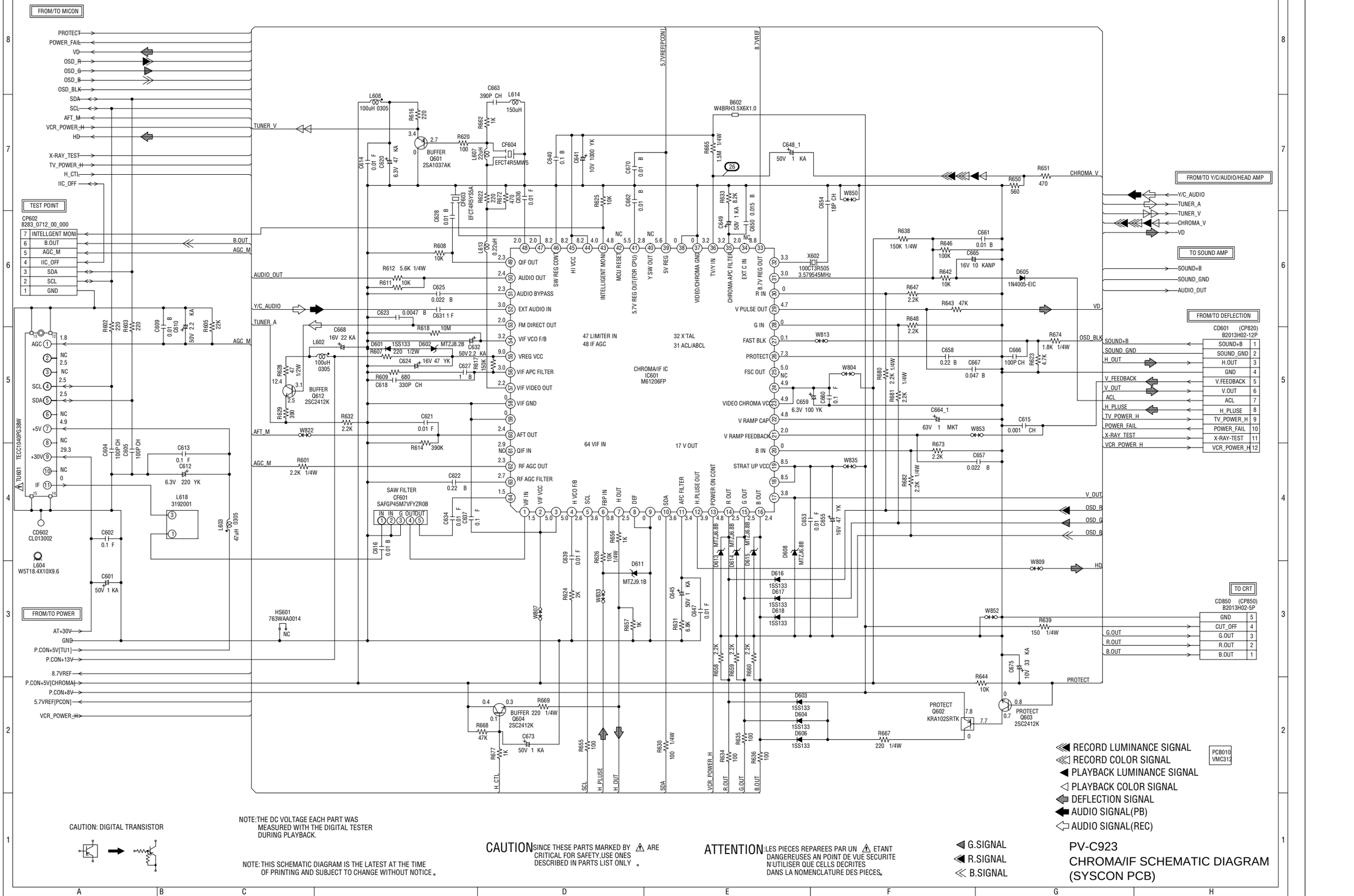
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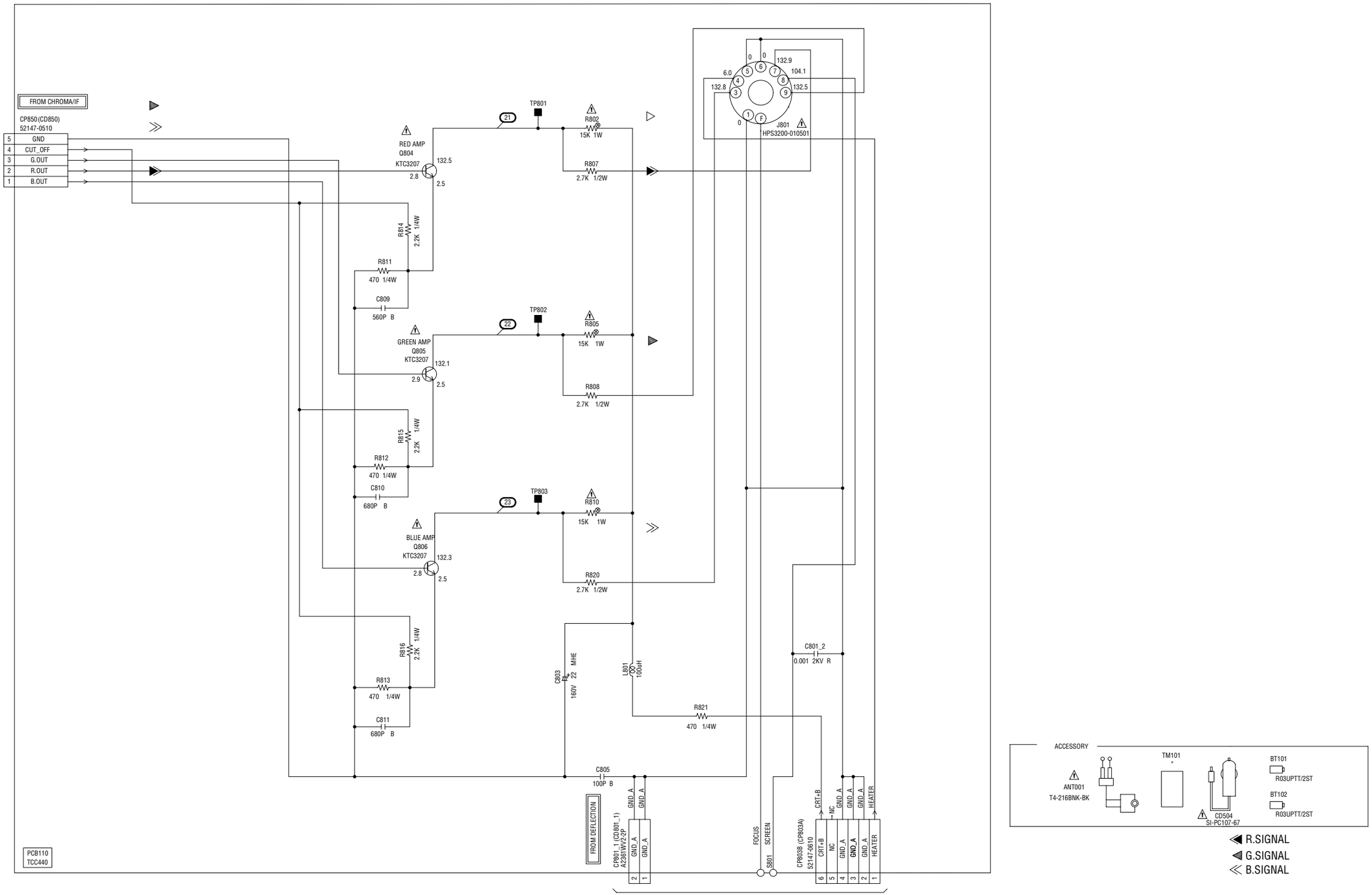
W804
W853
W835
W809
W852
W850
D605 1N4005-EIC
D602 MTZJ8.2B
D603 1SS133
D604 1SS133
D606 1SS133
D608 MTZJ6.8B
D611 MTZJ9.1B
D616 1SS133
D617 1SS133
D618 1SS133
PROTECT Q602 KRA102SRTK
PROTECT Q603 2SC2412K
CHROMA/IF IC IC601 M61206FP
FROM/TO POWER
AT+30V
GND
P.CON+5V[TU1]
P.CON+13V
8.7VREF
P.CON+5V[CHROMA]
P.CON+8V
5.7VREF[PCON]
VCR_POWER_H
5.7VREF[PCON]
8.7VREF
CHROMA_V
FROM/TO Y/C/AUDIO/HEAD AMP
Y/C_AUDIO
TUNER_A
TUNER_V
CHROMA_V
VD
TO SOUND AMP
SOUND+B
SOUND_GND
AUDIO_OUT
FROM/TO DEFLECTION
CD601 (CP820)
B2013H02-12P
SOUND+B 1
SOUND_GND 2
H.OUT 3
GND 4
V.FEEDBACK 5
V.OUT 6
ACL 7
H_PLUSE 8
TV_POWER_H 9
POWER_FAIL 10
X-RAY-TEST 11
VCR_POWER_H 12
TO CRT
CD850 (CP850)
B2013H02-5P
GND 5
CUT_OFF 4
G.OUT 3
R.OUT 2
B.OUT 1
V_OUT
OSD_R
OSD_G
OSD_B
HD
PROTECT
SOUND+B
SOUND_GND
H_OUT
V_FEEDBACK
V_OUT
ACL
H_PLUSE
TV_POWER_H
POWER_FAIL
X-RAY_TEST
VCR_POWER_H
SCL
SDA
H_CTL
H_PLUSE
H_OUT
G.OUT
R.OUT
B.OUT
RECORD LUMINANCE SIGNAL
RECORD COLOR SIGNAL
PLAYBACK LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL
DEFLECTION SIGNAL
AUDIO SIGNAL(PB)
AUDIO SIGNAL(REC)
PCB010
VMC312
G.SIGNAL
R.SIGNAL
B.SIGNAL
CAUTION: DIGITAL TRANSISTOR
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。
CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。
PV-C923
CHROMA/IF SCHEMATIC DIAGRAM
(SYSCON PCB)



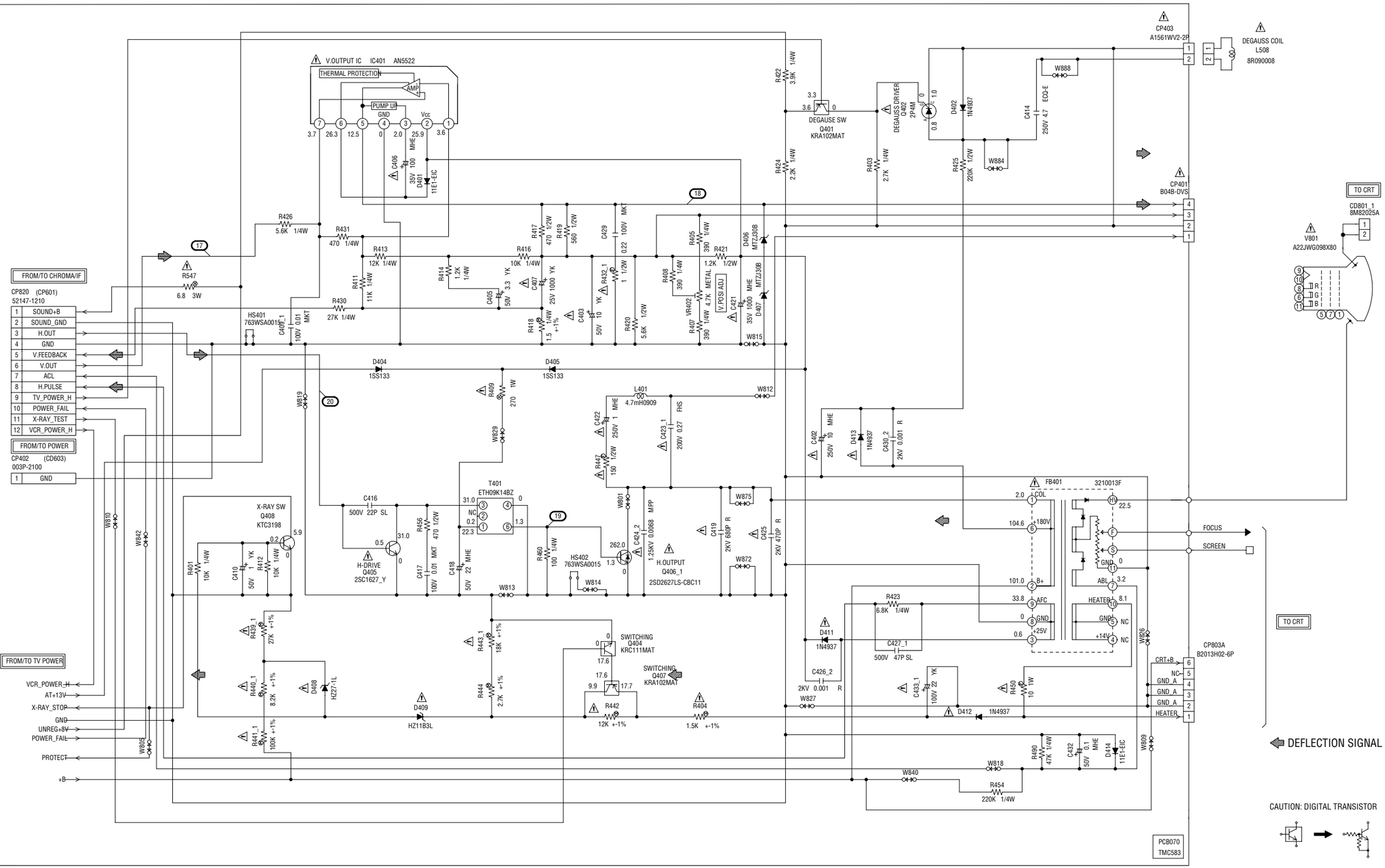
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PV-C923
CRT SCHEMATIC DIAGRAM
(CRT PCB)



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

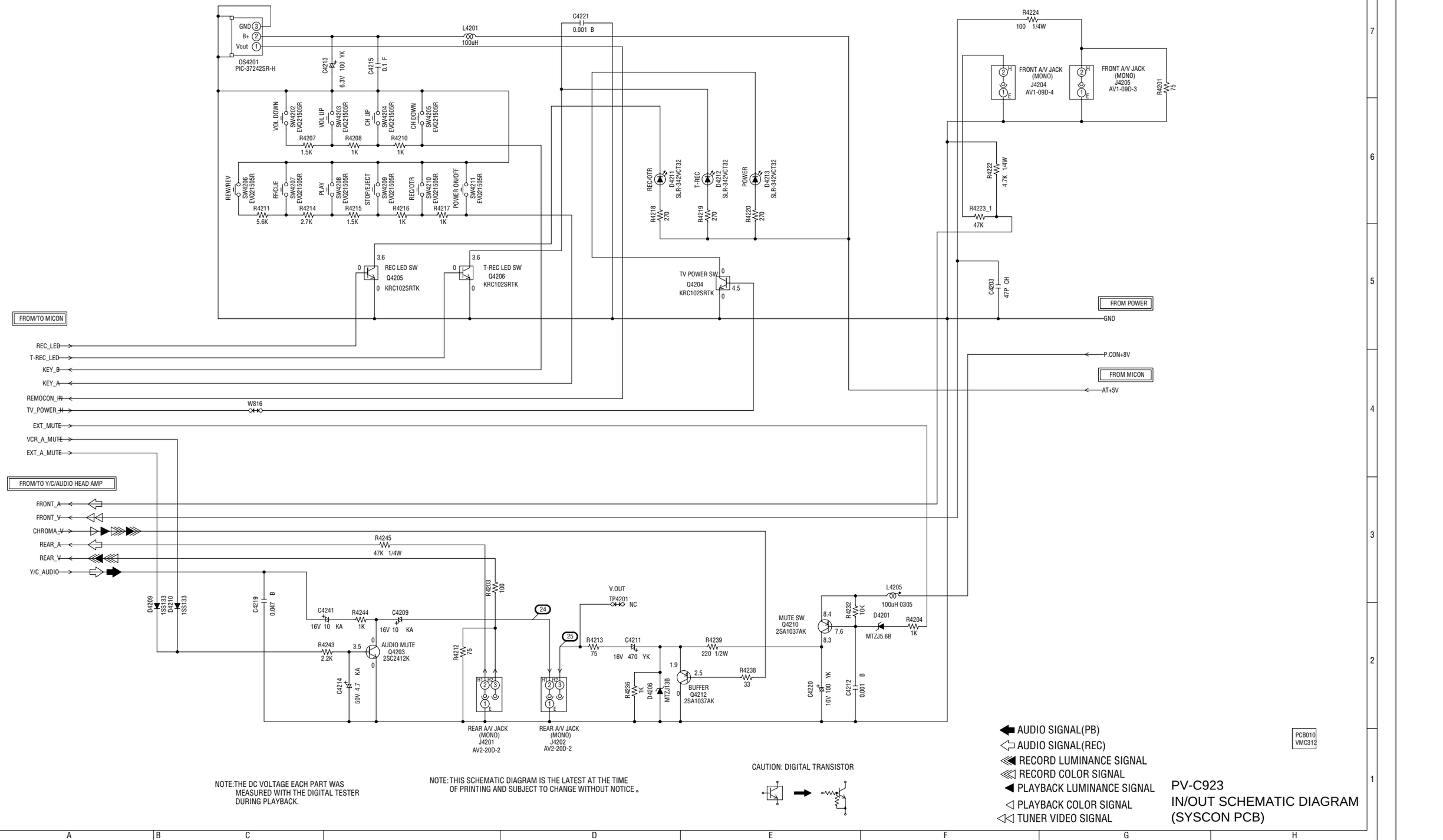
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

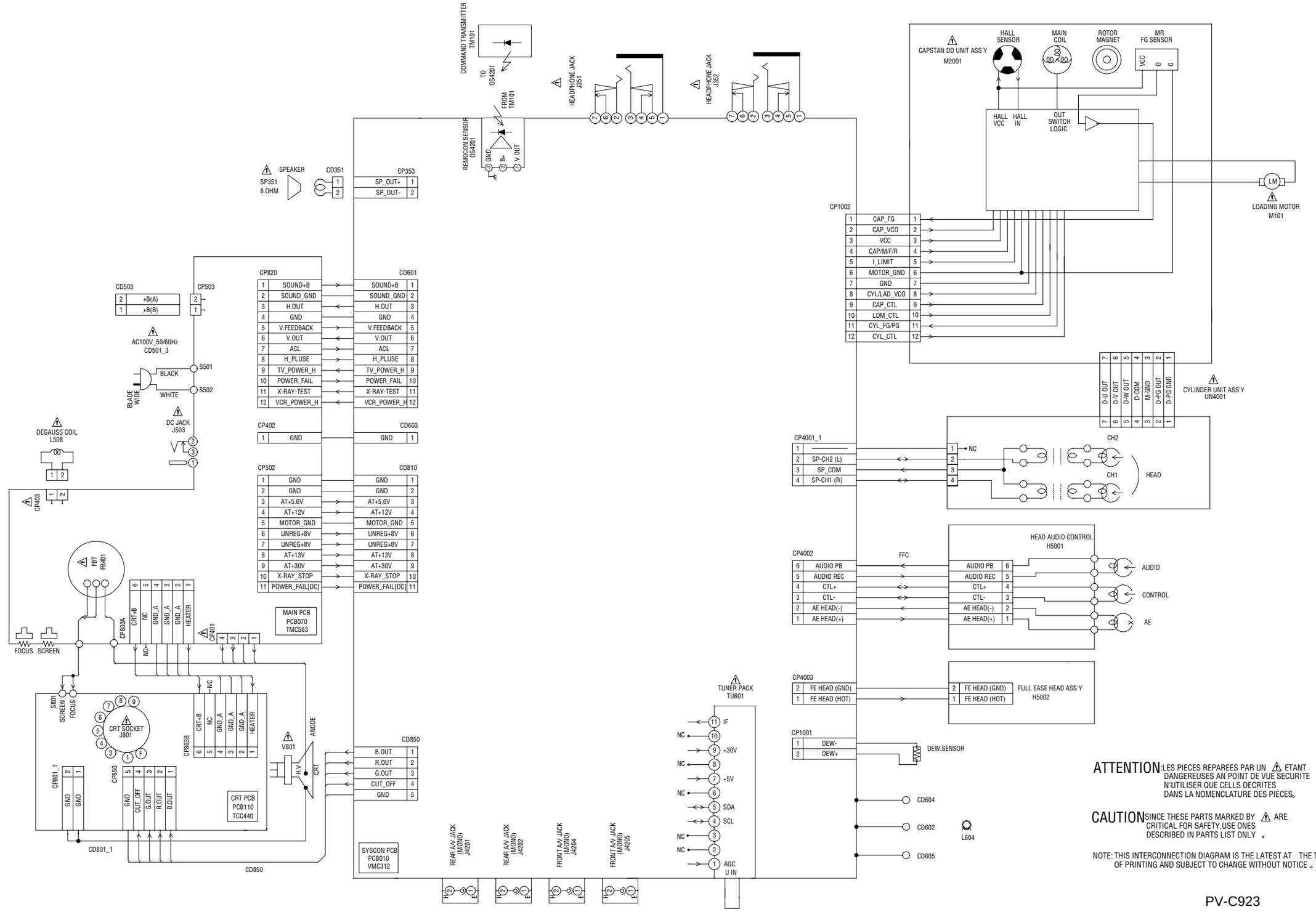
ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N:UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

CAUTION: DIGITAL TRANSISTOR

PV-C923 DEFLECTION SCHEMATIC DIAGRAM (MAIN PCB)


OS4201
PIC-37242SR-H
GND
B+
Vout
L4201
100uH
C4221
0.001 B
C4213
6.3V 100 YK
C4215
0.1 F
VOL DOWN
SW4202
EVQ21505R
VOL UP
SW4203
EVQ21505R
CH UP
SW4204
EVQ21505R
CH DOWN
SW4205
EVQ21505R
R4207
1.5K
R4208
1K
R4210
1K
REW/REV
SW4206
EVQ21505R
FF/CUE
SW4207
EVQ21505R
PLAY
SW4208
EVQ21505R
STOP/EJECT
SW4209
EVQ21505R
REC/OTR
SW4210
EVQ21505R
POWER ON/OFF
SW4211
EVQ21505R
R4211
5.6K
R4214
2.7K
R4215
1.5K
R4216
1K
R4217
1K
REC/OTR
D4211
SLR-342VCT32
T-REC
D4212
SLR-342VCT32
POWER
D4213
SLR-342VCT32
R4218
270
R4219
270
R4220
270
REC LED SW
Q4205
KRC102SRTK
T-REC LED SW
Q4206
KRC102SRTK
TV POWER SW
Q4204
KRC102SRTK
R4224
100 1/4W
FRONT A/V JACK
(MONO)
J4204
AV1-09D-4
FRONT A/V JACK
(MONO)
J4205
AV1-09D-3
R4201
75
R4222
4.7K 1/4W
R4223_1
47K
C4203
47P CH
FROM POWER
GND
P.CON+8V
FROM MICON
AT+5V
FROM/TO MICON
REC_LED
T-REC_LED
KEY_B
KEY_A
REMOCON_IN
TV_POWER_H
W816
EXT_MUTE
VCR_A_MUTE
EXT_A_MUTE
FROM/TO Y/C/AUDIO HEAD AMP
FRONT_A
FRONT_V
CHROMA_V
REAR_A
REAR_V
Y/C_AUDIO
R4245
47K 1/4W
D4209
1SS133
D4210
1SS133
C4219
0.047 B
C4241
16V 10 KA
R4244
1K
C4209
16V 10 KA
R4243
2.2K
AUDIO MUTE
Q4203
2SC2412K
C4214
50V 4.7 KA
R4212
75
R4203
100
V.OUT
TP4201
NC
R4213
75
C4211
16V 470 YK
R4239
220 1/2W
R4238
33
R4236
1K
D4206
MTZJ13B
BUFFER
Q4212
2SA1037AK
MUTE SW
Q4210
2SA1037AK
L4205
100uH 0305
R4232
1M 10K
D4201
MTZJ5.6B
R4204
1K
C4220
10V 100 YK
C4212
0.001 B
REAR A/V JACK
(MONO)
J4201
AV2-20D-2
REAR A/V JACK
(MONO)
J4202
AV2-20D-2
AUDIO SIGNAL(PB)
AUDIO SIGNAL(REC)
RECORD LUMINANCE SIGNAL
RECORD COLOR SIGNAL
PLAYBACK LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL
TUNER VIDEO SIGNAL
PCB010
VMC312
PV-C923
IN/OUT SCHEMATIC DIAGRAM
(SYSCON PCB)
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。
CAUTION: DIGITAL TRANSISTOR

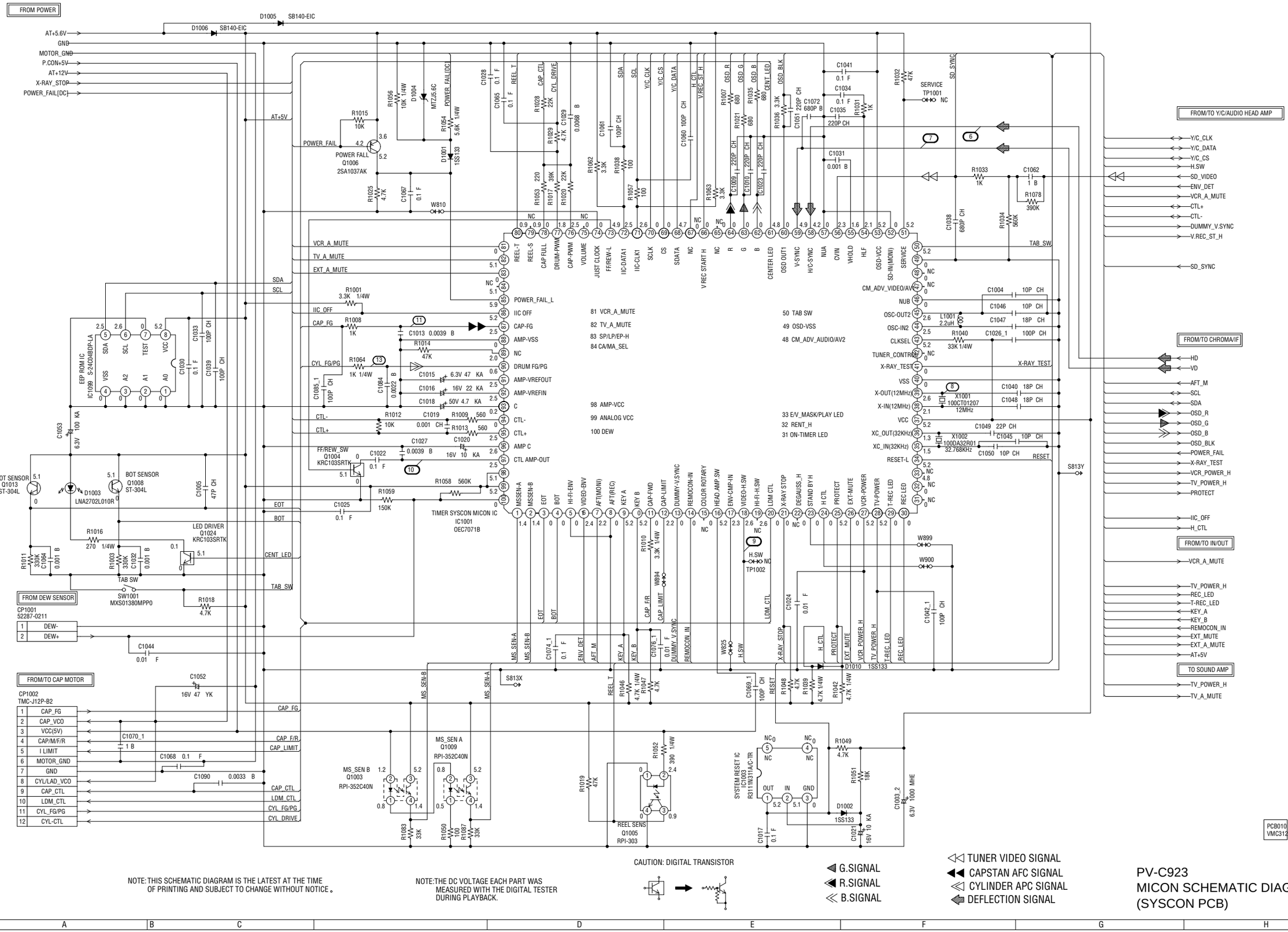


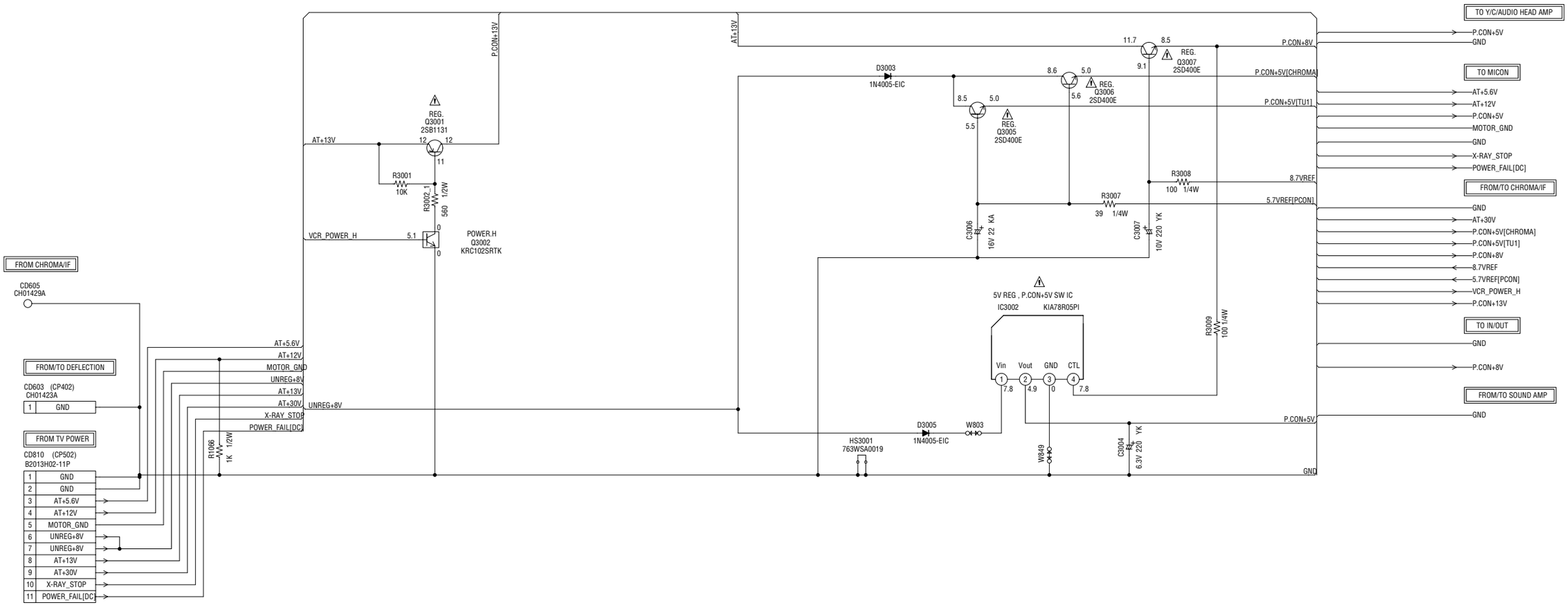
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

PV-C923
INTERCONNECTION DIAGRAM


FROM POWER
AT+5.6V
GND
MOTOR_GND
P.CON+5V
AT+12V
X-RAY_STOP
POWER_FAIL[DC]
D1005 SB140-EIC
D1006 SB140-EIC
AT+5V
POWER_FAIL
POWER FALL Q1006 2SA1037AK
D1001 1SS133
D1004 MTZJ5.6C
W810
SERVICE TP1001 NC
SD_SYNC
FROM/TO Y/C/AUDIO HEAD AMP
Y/C_CLK
Y/C_DATA
Y/C_CS
H.SW
SD_VIDEO
ENV_DET
VCR_A_AMUTE
CTL+
CTL-
DUMMY_V.SYNC
V.REC_ST_H
SD_SYNC
TAB_SW
VCR_A_MUTE
TV_A_MUTE
EXT_A_MUTE
SDA
SCL
IIC_OFF
CAP_FG
CYL_FG/PG
FF/REW_SW
CTL-
CTL+
AMP C
CTL AMP-OUT
EOT
BOT
CENT_LED
TAB_SW
EEP ROM IC IC1099 S-24C04BDP-LA
TIMER SYSCON MICON IC IC1001 OEC7071B
LED DRIVER Q1024 KRC103SRTK
EOT SENSOR Q1013 ST-304L
BOT SENSOR Q1008 ST-304L
D1003 LNA2702L010R
FROM DEW SENSOR
CP1001 52287-0211
DEW-
DEW+
SW1001 MXS01380MPP0
FROM/TO CAP MOTOR
CP1002 TMC-J12P-B2
CAP_FG
CAP_VCO
VCC(5V)
CAP/M/F/R
I LIMIT
MOTOR_GND
GND
CYL/LAD_VCO
CAP_CTL
LDM_CTL
CYL_FG/PG
CYL-CTL
CAP_F/R
CAP_LIMIT
MS_SEN A Q1009 RPI-352C40N
MS_SEN B Q1003 RPI-352C40N
REEL SENS Q1005 RPI-303
SYSTEM RESET IC IC1003 R3111N311A/C-TR
D1002 1SS133
S813X
S813Y
W899
W900
TP1002 H.SW NC
X1001 100CT01207 12MHz
X1002 100DA32R01 32.768KHz
RESET
FROM/TO CHROMA/IF
HD
VD
AFT_M
SCL
SDA
OSD_R
OSD_G
OSD_B
OSD_BLK
POWER_FAIL
X-RAY_TEST
VCR_POWER_H
TV_POWER_H
PROTECT
IIC_OFF
H_CTL
FROM/TO IN/OUT
VCR_A_MUTE
TV_POWER_H
REC_LED
T-REC_LED
KEY_A
KEY_B
REMOCON_IN
EXT_MUTE
EXT_A_MUTE
AT+5V
TO SOUND AMP
TV_POWER_H
TV_A_MUTE
81 VCR_A_MUTE
82 TV_A_MUTE
83 SP/LP/EP-H
84 CA/MA_SEL
98 AMP-VCC
99 ANALOG VCC
100 DEW
50 TAB SW
49 OSD-VSS
48 CM_ADV_AUDIO/AV2
33 E/V_MASK/PLAY LED
32 RENT_H
31 ON-TIMER LED
PCB010 VMC312
CAUTION: DIGITAL TRANSISTOR
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.
G.SIGNAL
R.SIGNAL
B.SIGNAL
TUNER VIDEO SIGNAL
CAPSTAN AFC SIGNAL
CYLINDER APC SIGNAL
DEFLECTION SIGNAL
PV-C923
MICON SCHEMATIC DIAGRAM
(SYSCON PCB)



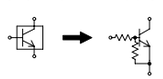
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

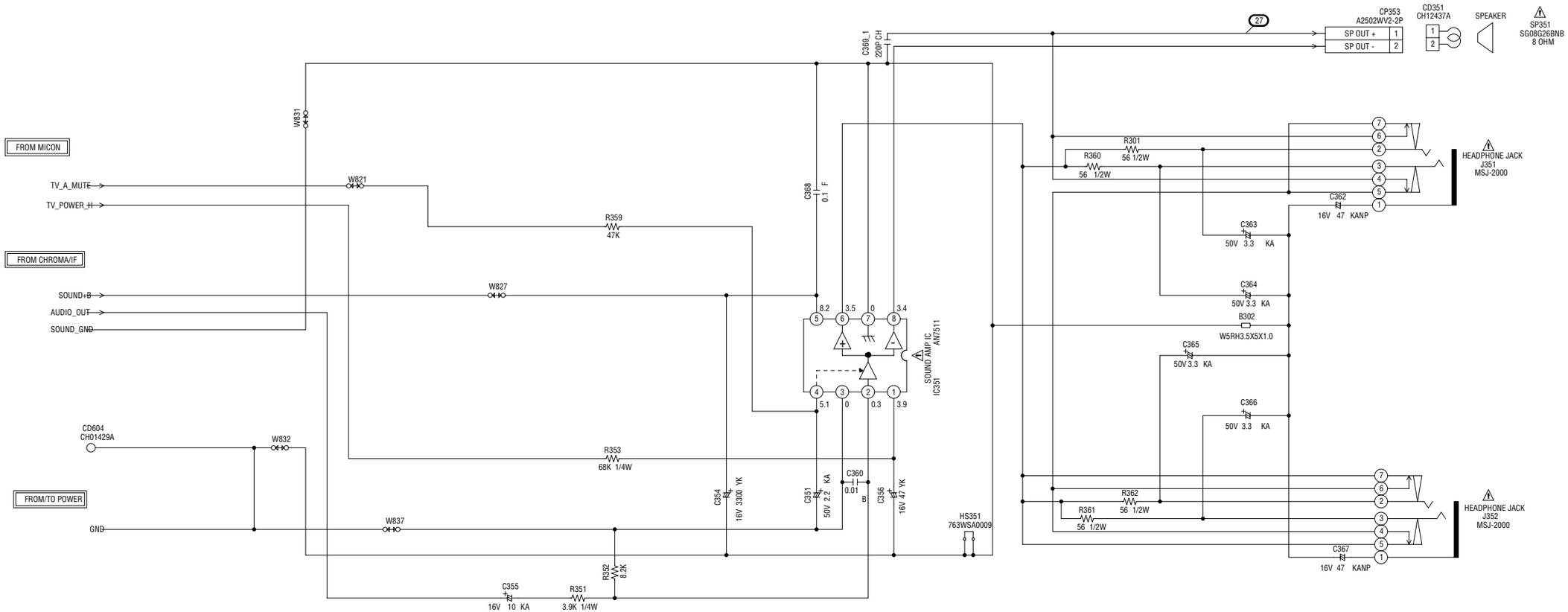
CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: DIGITAL TRANSISTOR



PV-C923
POWER SCHEMATIC DIAGRAM
(SYSCON PCB)



PCB010
VMC312

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

PV-C923
SOUND AMP SCHEMATIC DIAGRAM (SYSCON PCB)

5A 125V

10A 125V

CAUTION :FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE (F501),5A 125V AND (ICP502),10A 125V.

ATTENTION :POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTOLISER QUE DES FUSIBLE DE MEME TYPE (F501),5A 125V AND (ICP502),10A 125V.

CAUTION: ICP502 ARE MANUFACTURED BY LITTELFUSE INC.,TYPE 251.

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

CP503 RE-H022TD-1130

CD503 JM-2BK-61

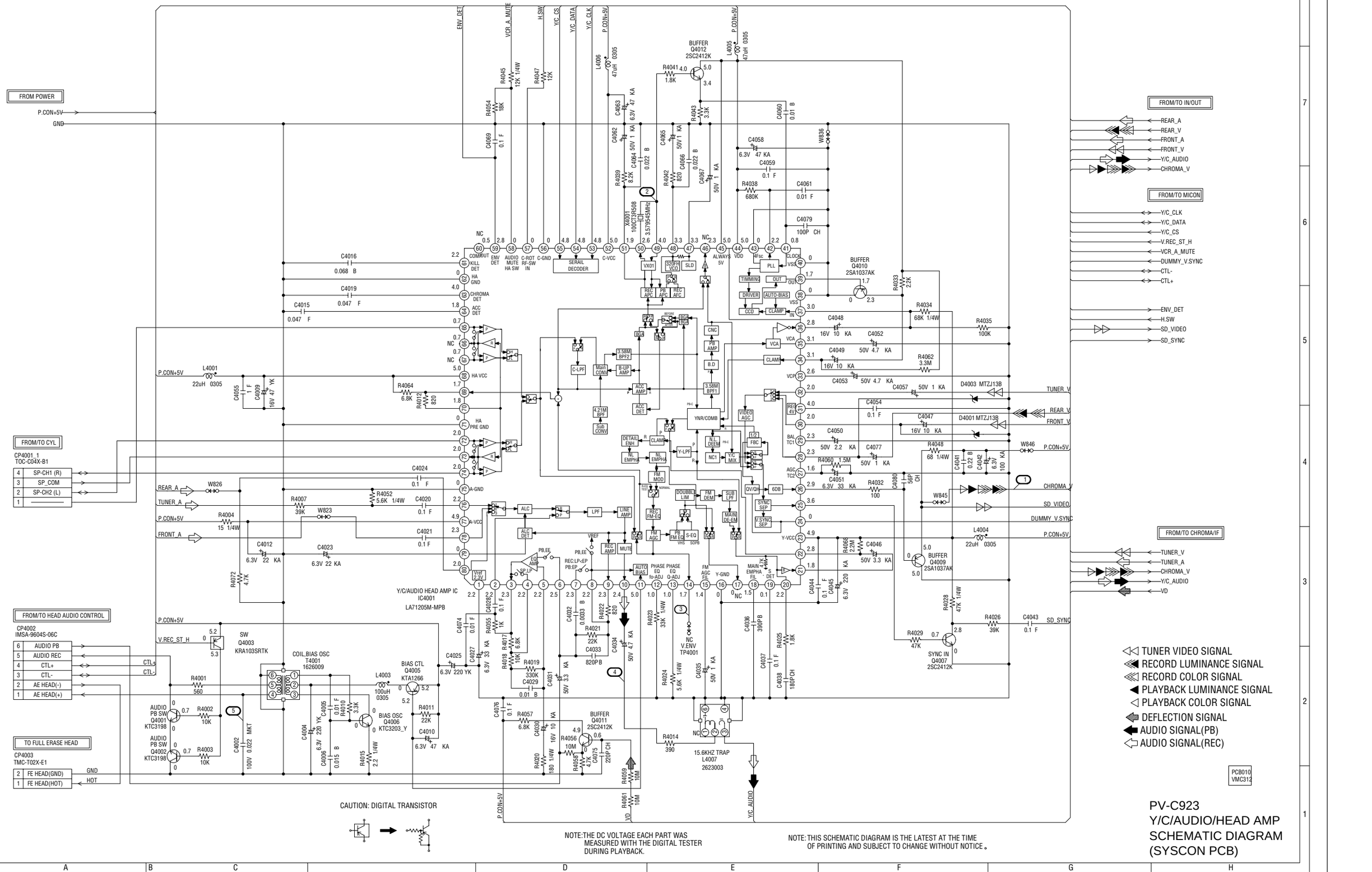
1	+B(A)
2	+B(B)

CP502 (CD810) 52147-1110

GND	1
GND	2
AT+5.6V	3
AT+12V	4
MOTOR_GND	5
UNREG+8V	6
UNREG+8V	7
AT+13V	8
AT+30V	9
X-RAY_STOP	10
POWER_FAIL[DC]	11

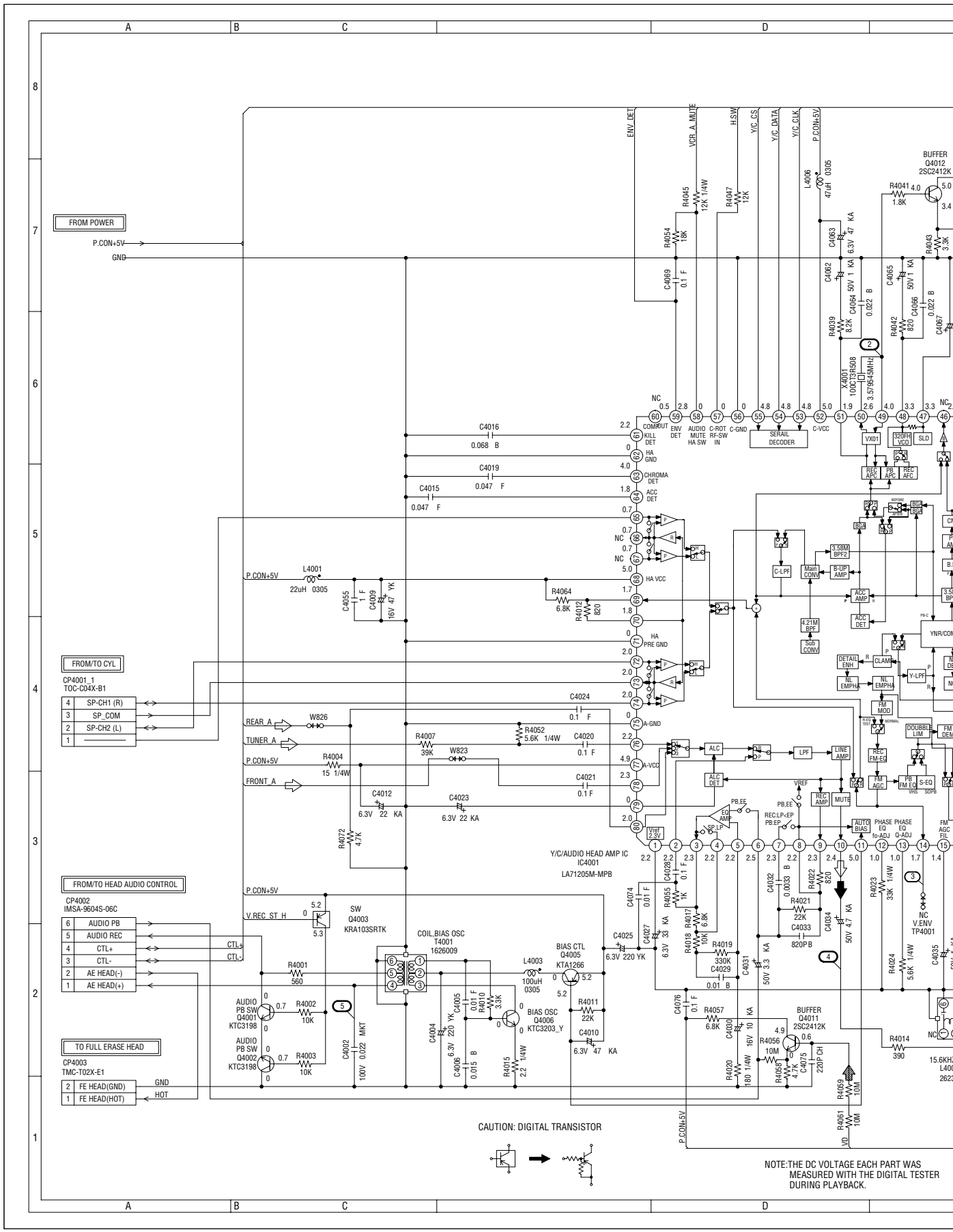
PCB070
TMC583

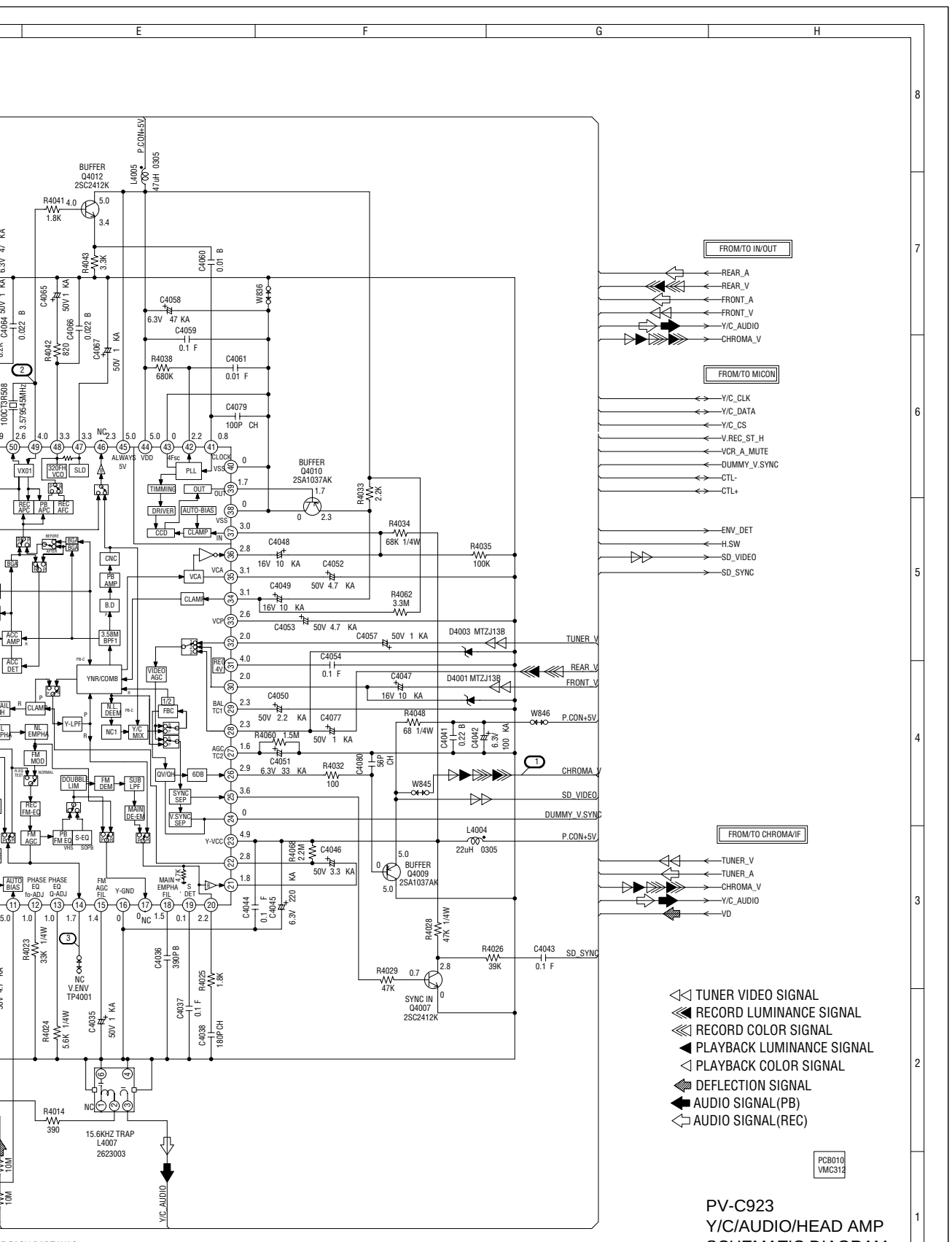
PV-C923
TV POWER SCHEMATIC DIAGRAM (MAIN PCB)


FROM POWER
P.CON+5V
GND
FROM/TO IN/OUT
REAR_A
REAR_V
FRONT_A
FRONT_V
Y/C_AUDIO
CHROMA_V
FROM/TO MICON
Y/C_CLK
Y/C_DATA
Y/C_CS
V.REC_ST_H
VCR_A_MUTE
DUMMY_V.SYNC
CTL-
CTL+
ENV_DET
H.SW
SD_VIDEO
SD_SYNC
FROM/TO CYL
CP4001_1
TOC-C04X-B1
SP-CH1 (R)
SP_COM
SP-CH2 (L)
FROM/TO HEAD AUDIO CONTROL
CP4002
IMSA-9604S-06C
AUDIO PB
AUDIO REC
CTL+
CTL-
AE HEAD(-)
AE HEAD(+)
TO FULL ERASE HEAD
CP4003
TMC-T02X-E1
FE HEAD(GND)
FE HEAD(HOT)
GND
HOT
BUFFER Q4012 2SC2412K
BUFFER Q4010 2SA1037AK
BUFFER Q4009 2SA1037AK
BUFFER Q4011 2SC2412K
SYNC IN Q4007 2SC2412K
SW Q4003 KRA103SRTK
BIAS CTL Q4005 KTA1266
BIAS OSC Q4006 KTC3203_Y
AUDIO PB SW Q4001 KTC3198
AUDIO PB SW Q4002 KTC3198
Y/C/AUDIO HEAD AMP IC IC4001 LA71205M-MPB
SERAIL DECODER
15.6KHZ TRAP L4007 2623003
FROM/TO CHROMA/IF
TUNER_V
TUNER_A
CHROMA_V
Y/C_AUDIO
VD
TUNER VIDEO SIGNAL
RECORD LUMINANCE SIGNAL
RECORD COLOR SIGNAL
PLAYBACK LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL
DEFLECTION SIGNAL
AUDIO SIGNAL(PB)
AUDIO SIGNAL(REC)
CAUTION: DIGITAL TRANSISTOR
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。
PCB010
VMC312
PV-C923
Y/C/AUDIO/HEAD AMP
SCHEMATIC DIAGRAM
(SYSCON PCB)

16 SCHEMATIC DIAGRAMS

16.1. Y/ C/ AUDIO/ HEAD AMP SCHEMATIC DIAGRAM



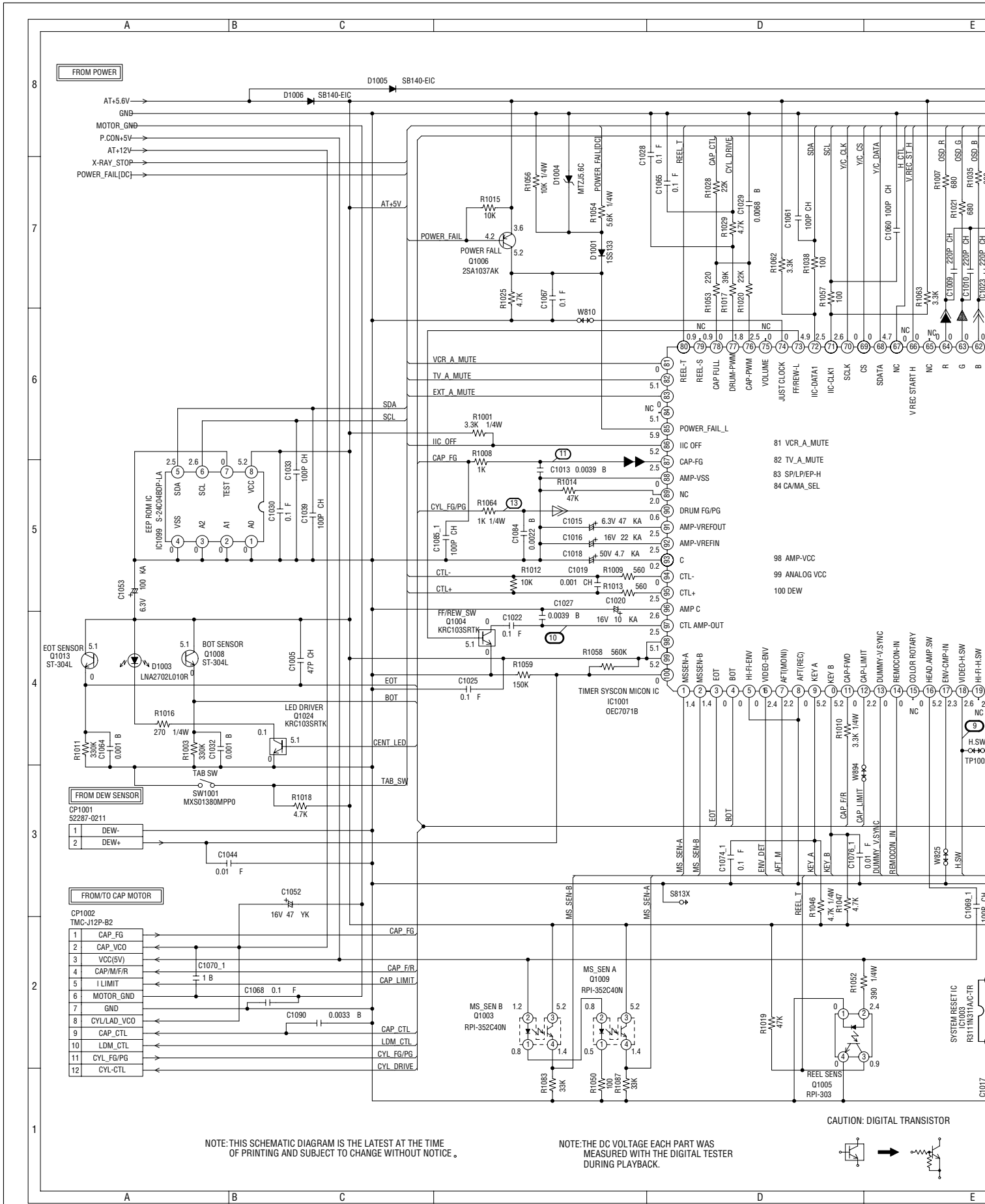


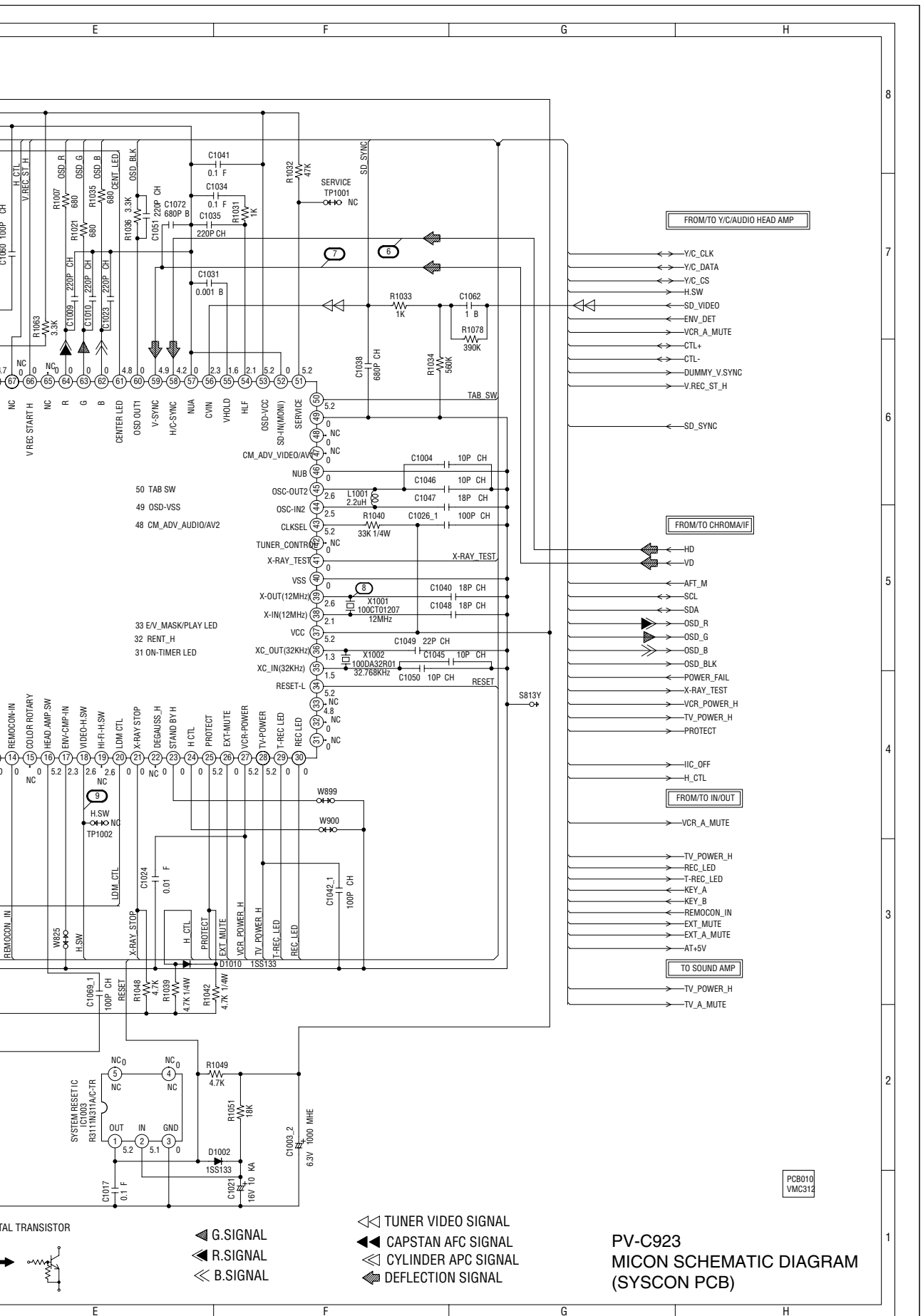
E EACH PART WAS
TH THE DIGITAL TESTER
ACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

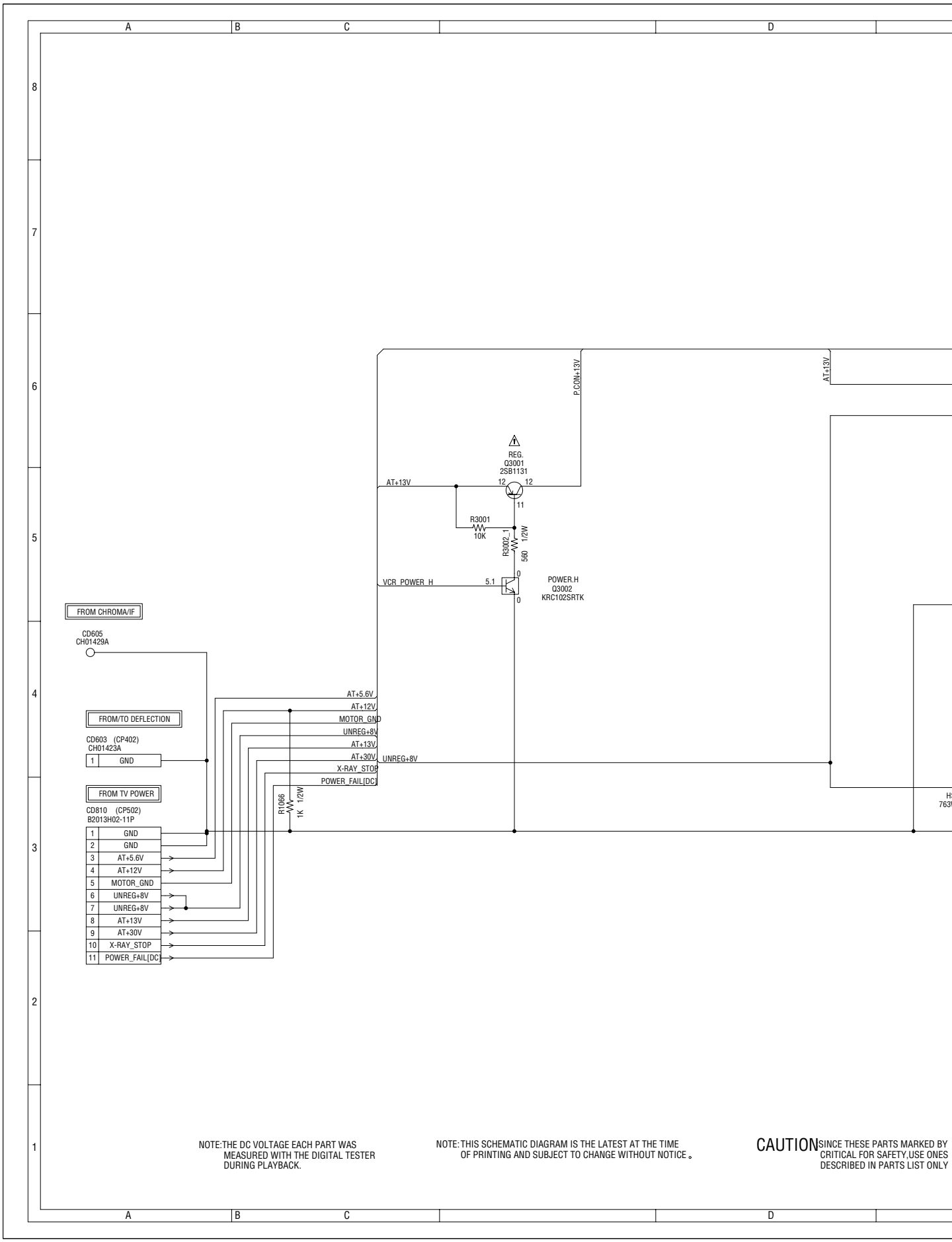
PV-C923
Y/C/AUDIO/HEAD AMP
SCHEMATIC DIAGRAM
(SYSCON PCB)

16.2. MICON SCHEMATIC DIAGRAM




FROM/TO Y/C/AUDIO HEAD AMP
Y/C_CLK
Y/C_DATA
Y/C_CS
H.SW
SD_VIDEO
ENV_DET
VCR_A_MUTE
CTL+
CTL-
DUMMY_V.SYNC
V.REC_ST_H
SD_SYNC
FROM/TO CHROMA/IF
HD
VD
AFT_M
SCL
SDA
OSD_R
OSD_G
OSD_B
OSD_BLK
POWER_FAIL
X-RAY_TEST
VCR_POWER_H
TV_POWER_H
PROTECT
IIC_OFF
H_CTL
FROM/TO IN/OUT
VCR_A_MUTE
TV_POWER_H
REC_LED
T-REC_LED
KEY_A
KEY_B
REMOCON_IN
EXT_MUTE
EXT_A_MUTE
AT+5V
TO SOUND AMP
TV_POWER_H
TV_A_MUTE
TAB_SW
SD_SYNC
X-RAY_TEST
RESET
S813Y
W899
W900
SERVICE
TP1001
H.SW
TP1002
D1010 1SS133
D1002 1SS133
SYSTEM RESET IC
IC1003
R3111N311A/C-TR
OUT IN GND
50 TAB SW
49 OSD-VSS
48 CM_ADV_AUDIO/AV2
33 E/V_MASK/PLAY LED
32 RENT_H
31 ON-TIMER LED
PCB010
VMC312
G.SIGNAL
R.SIGNAL
B.SIGNAL
TUNER VIDEO SIGNAL
CAPSTAN AFC SIGNAL
CYLINDER APC SIGNAL
DEFLECTION SIGNAL
PV-C923
MICON SCHEMATIC DIAGRAM
(SYSCON PCB)

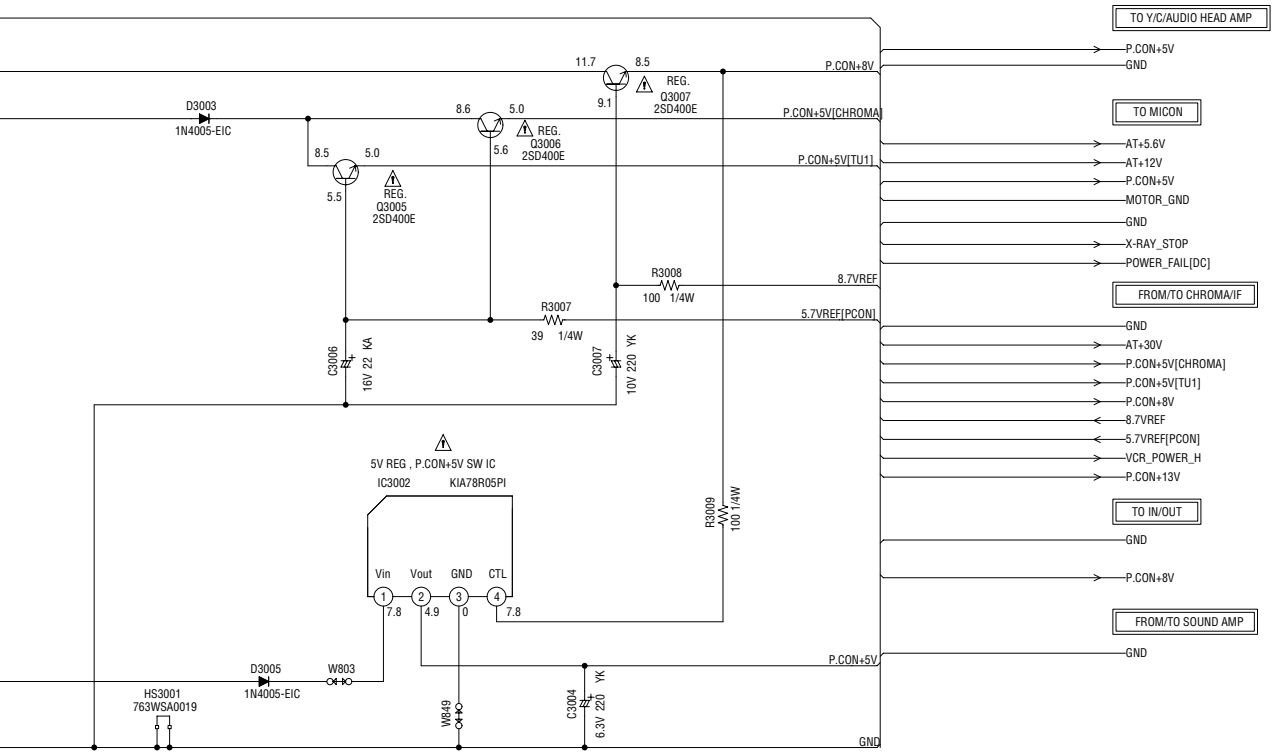
16.3. POWER SCHEMATIC DIAGRAM



NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

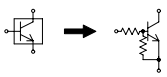
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

CAUTION SINCE THESE PARTS MARKED BY CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY



PCB010
VMC312

CAUTION: DIGITAL TRANSISTOR

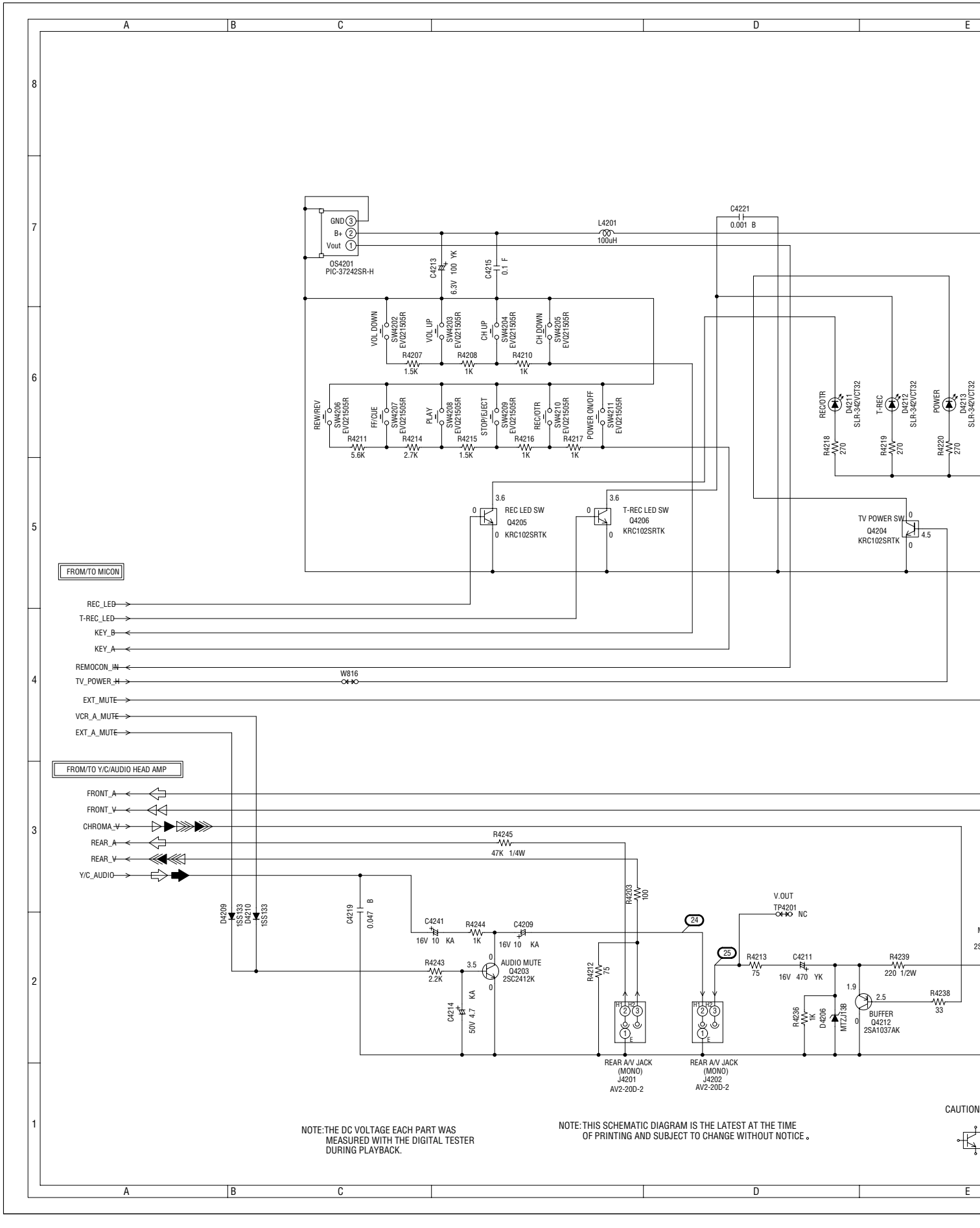


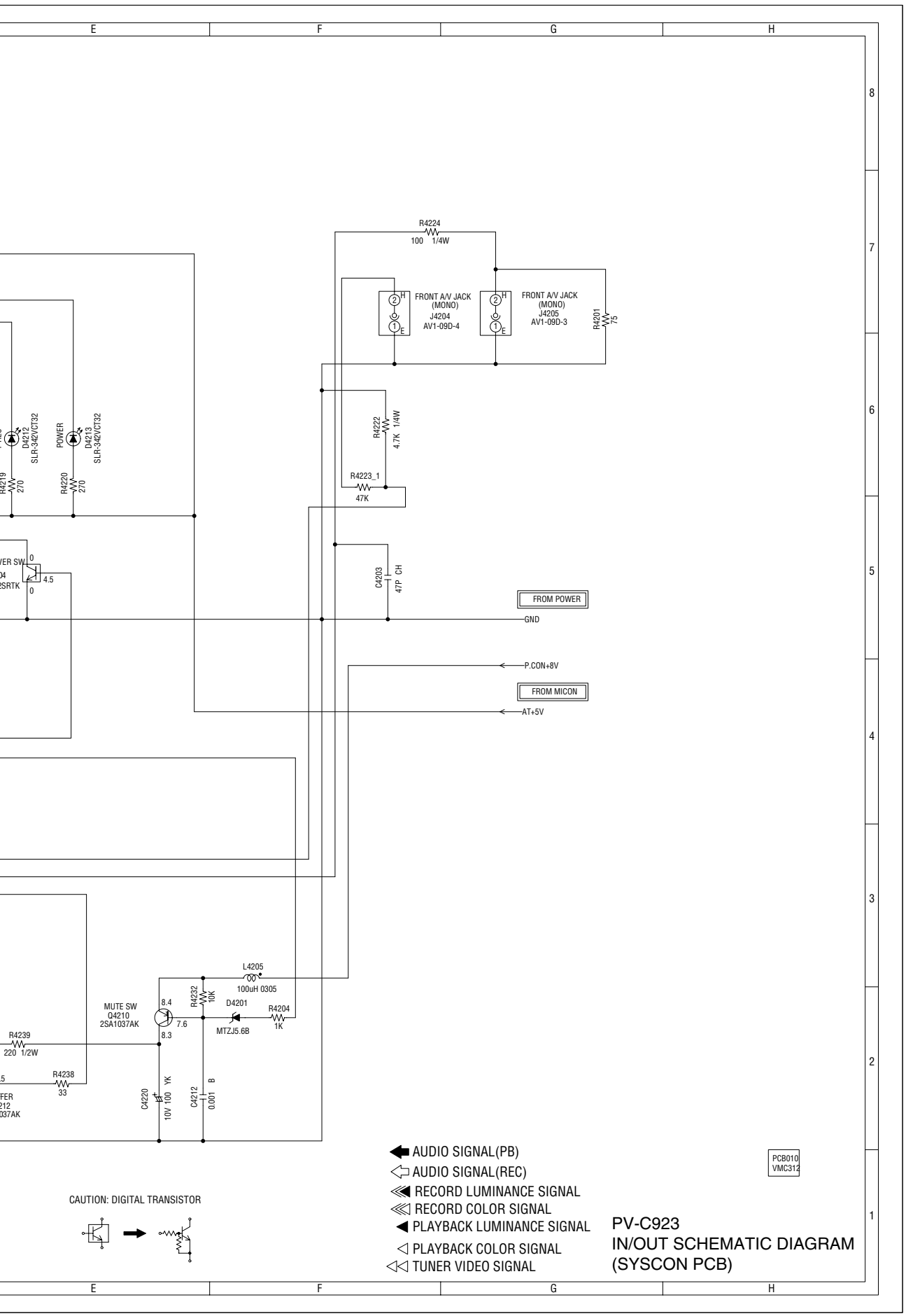
PV-C923
POWER SCHEMATIC DIAGRAM
(SYSCON PCB)

HESE PARTS MARKED BY ⚠ ARE
L FOR SAFETY,USE ONES
BED IN PARTS LIST ONLY 。

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES。

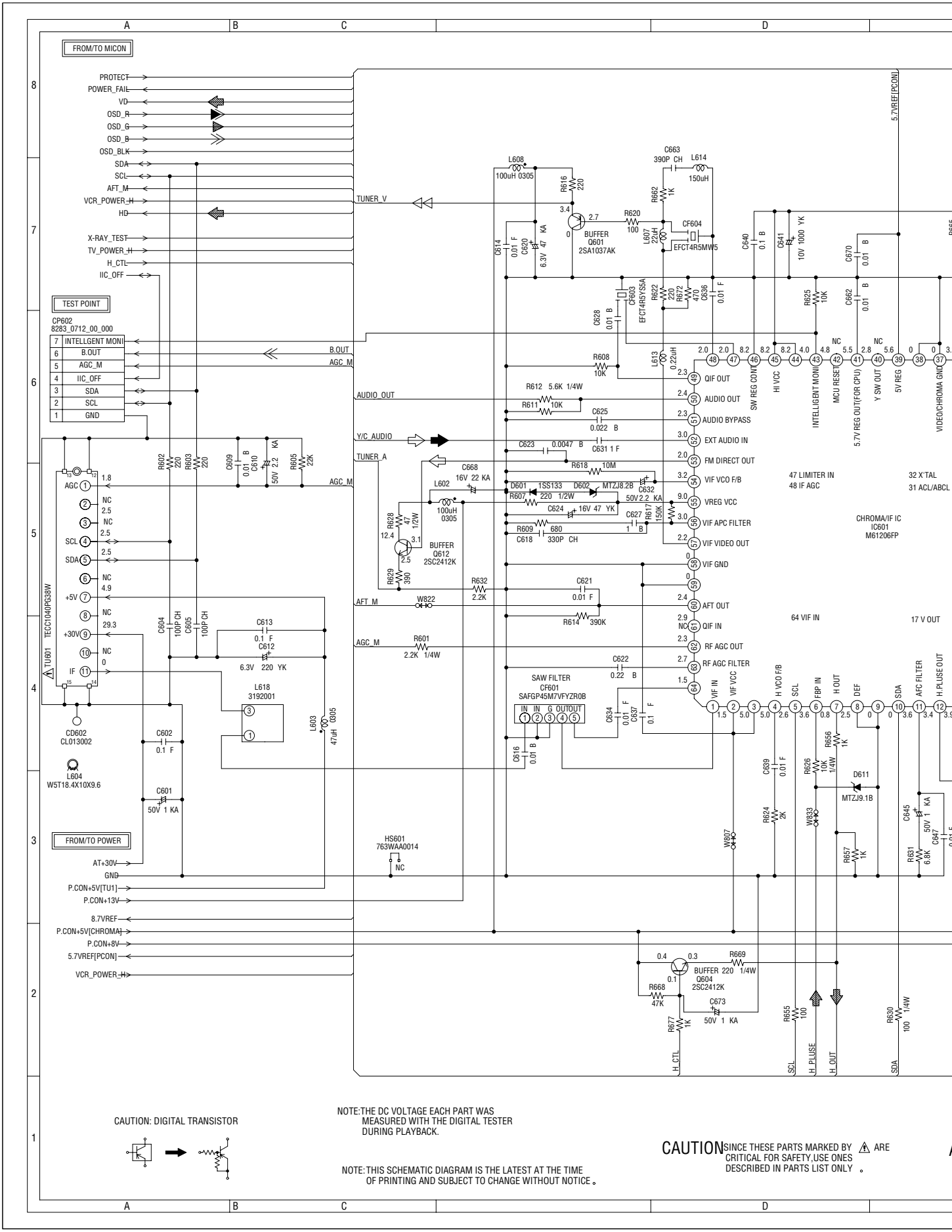
16.4. IN/ OUT SCHEMATIC DIAGRAM





PV-C923
IN/OUT SCHEMATIC DIAGRAM
(SYSCON PCB)

16.5. CHROMA/ IF SCHEMATIC DIAGRAM

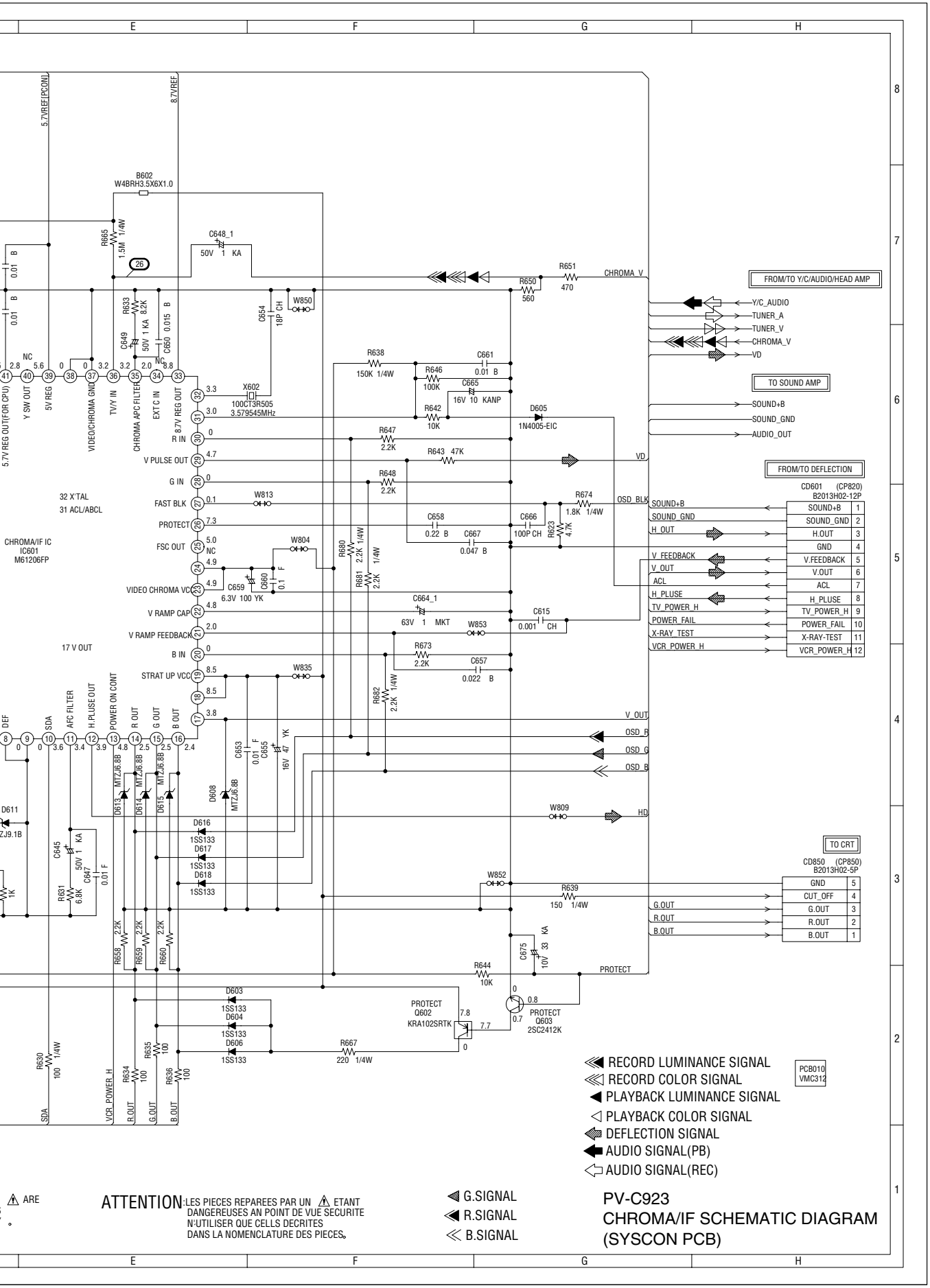


CAUTION: DIGITAL TRANSISTOR

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

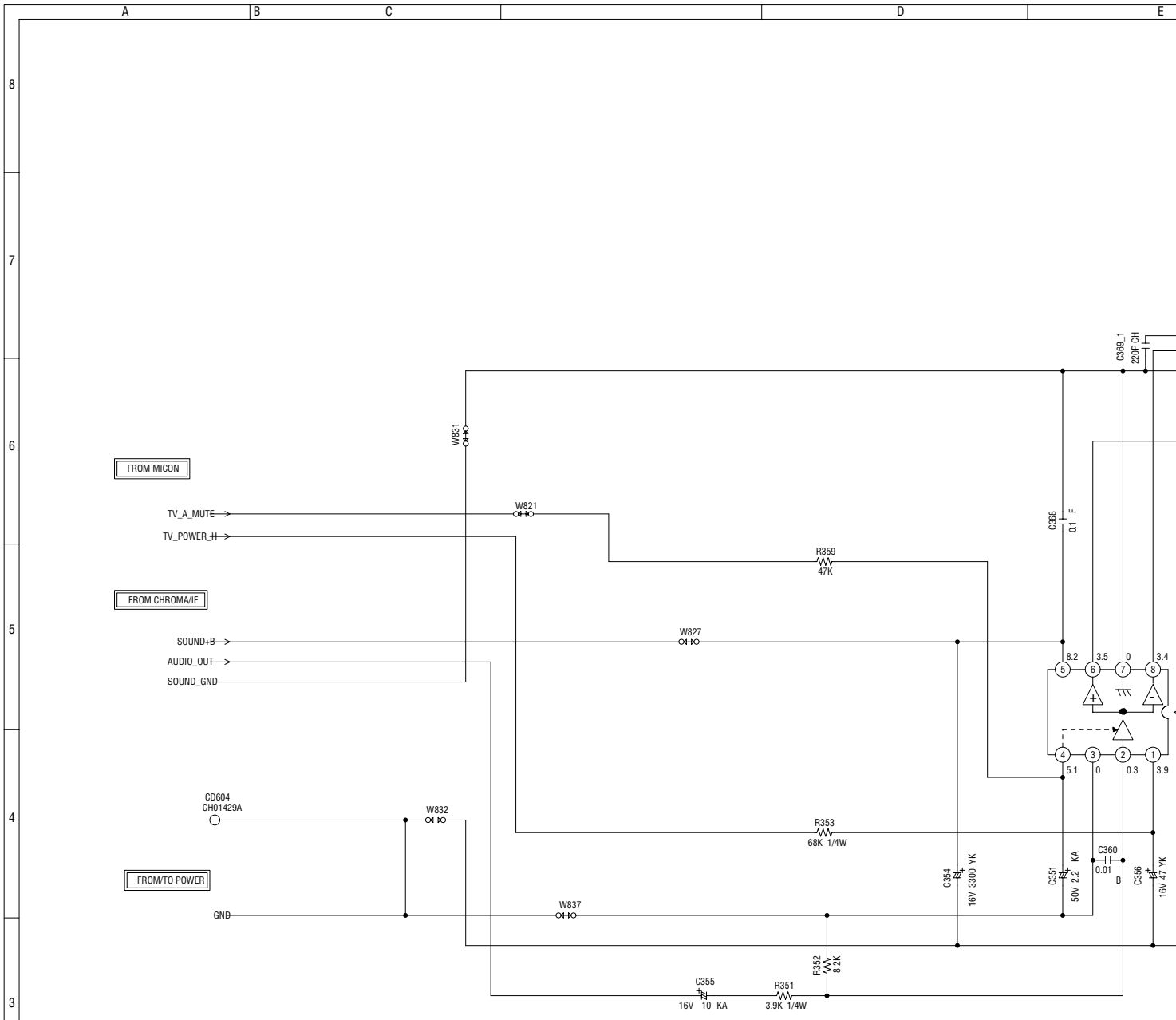
CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。



ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

PV-C923
CHROMA/IF SCHEMATIC DIAGRAM
(SYSCON PCB)

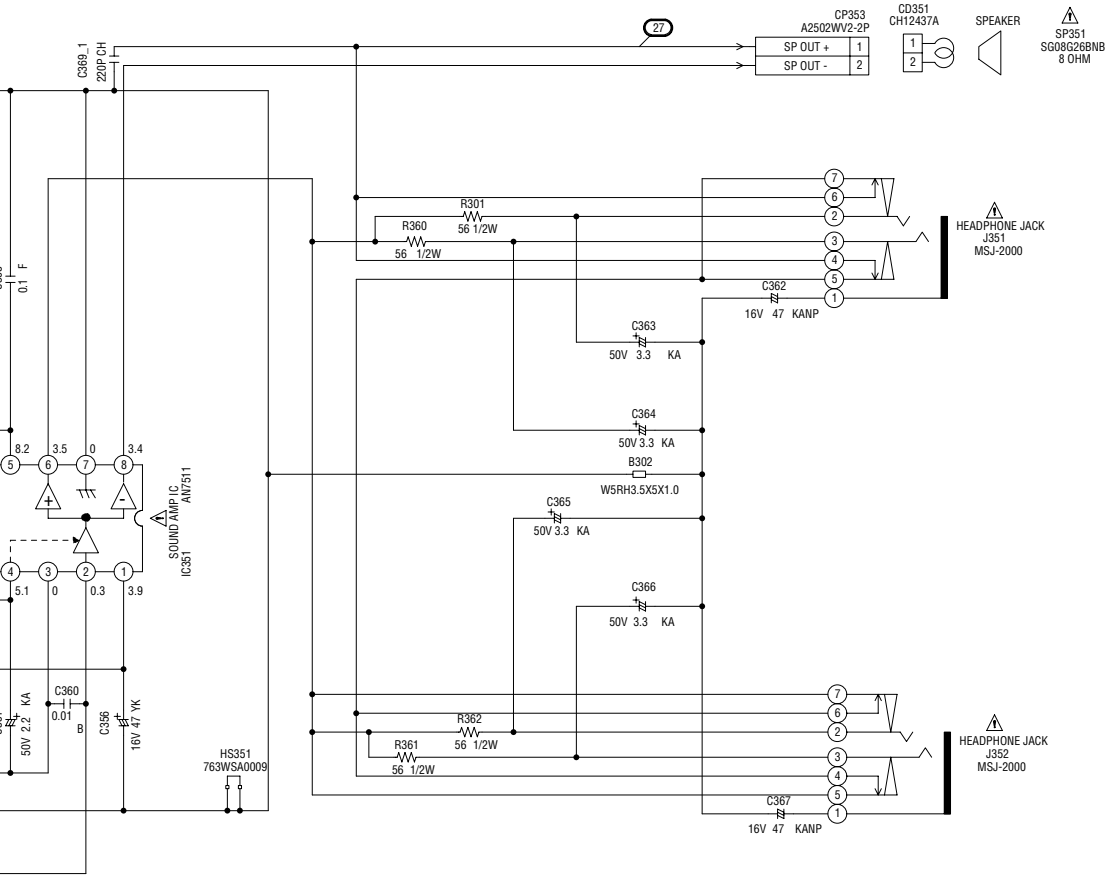
16.6. SOUND AMP SCHEMATIC DIAGRAM



NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

CAUTION SINCE THESE PARTS MA
CRITICAL FOR SAFETY,U
DESCRIBED IN PARTS L

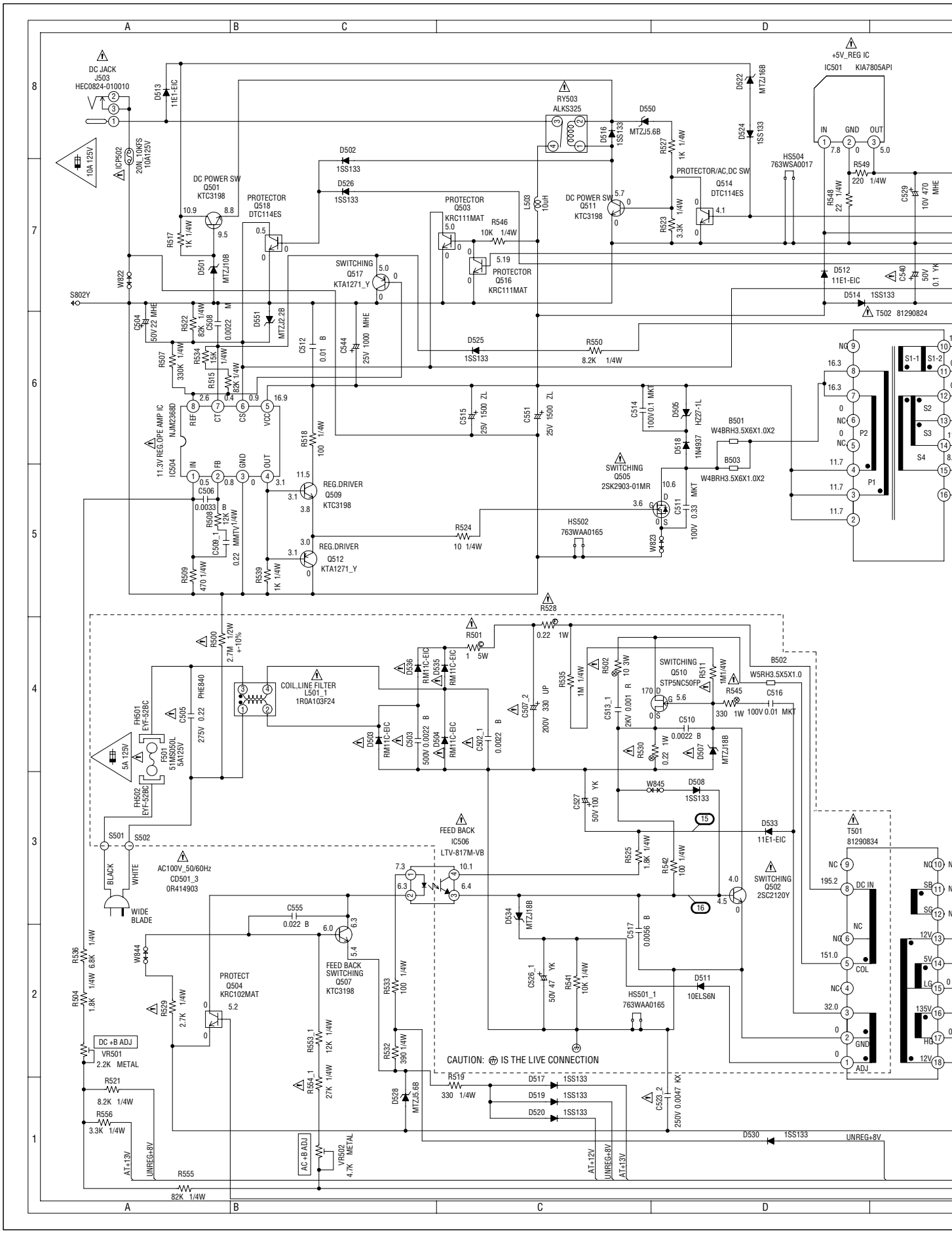


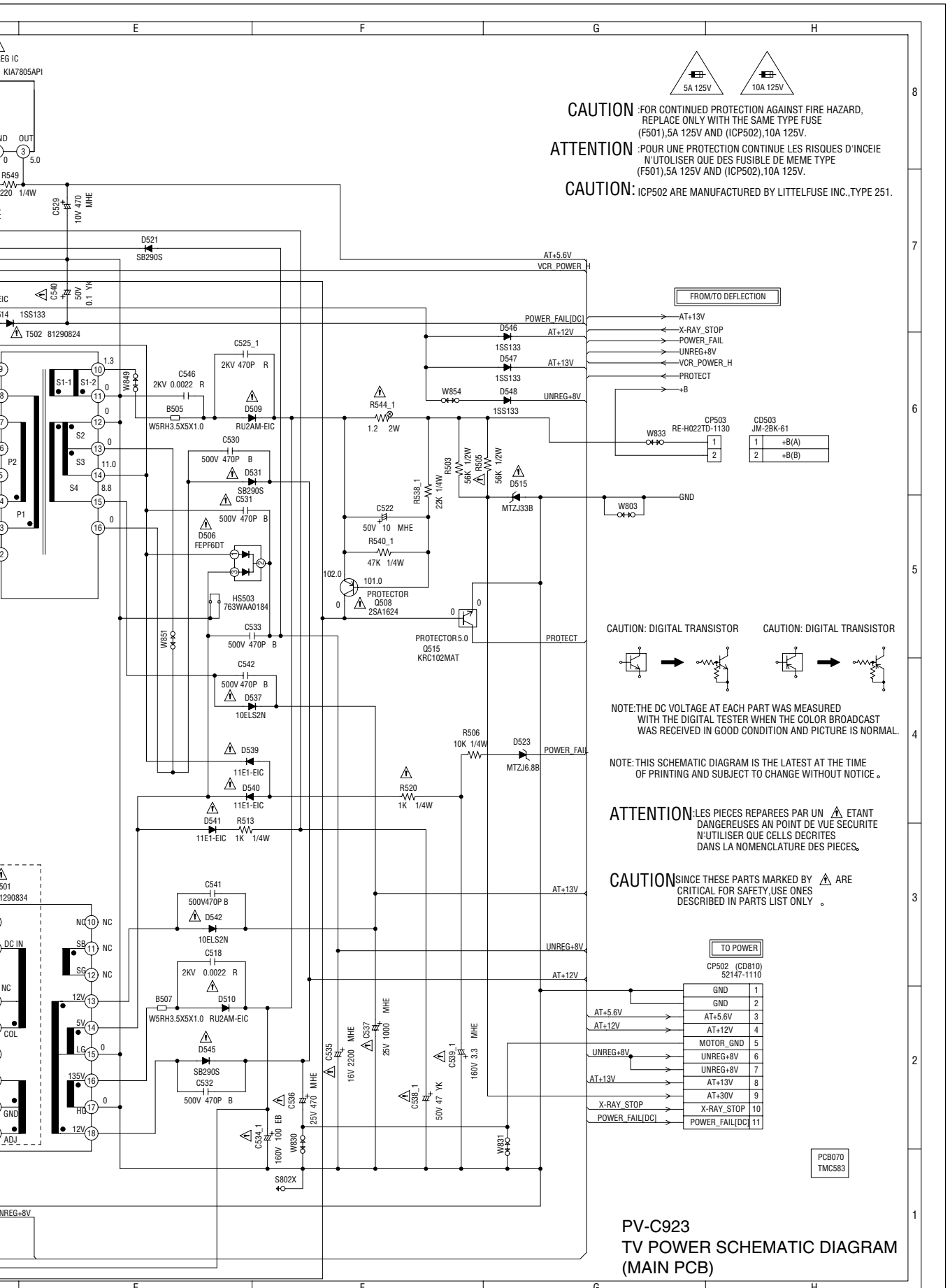
⚠ SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

PV-C923
SOUND AMP SCHEMATIC DIAGRAM
(SYSCON PCB)

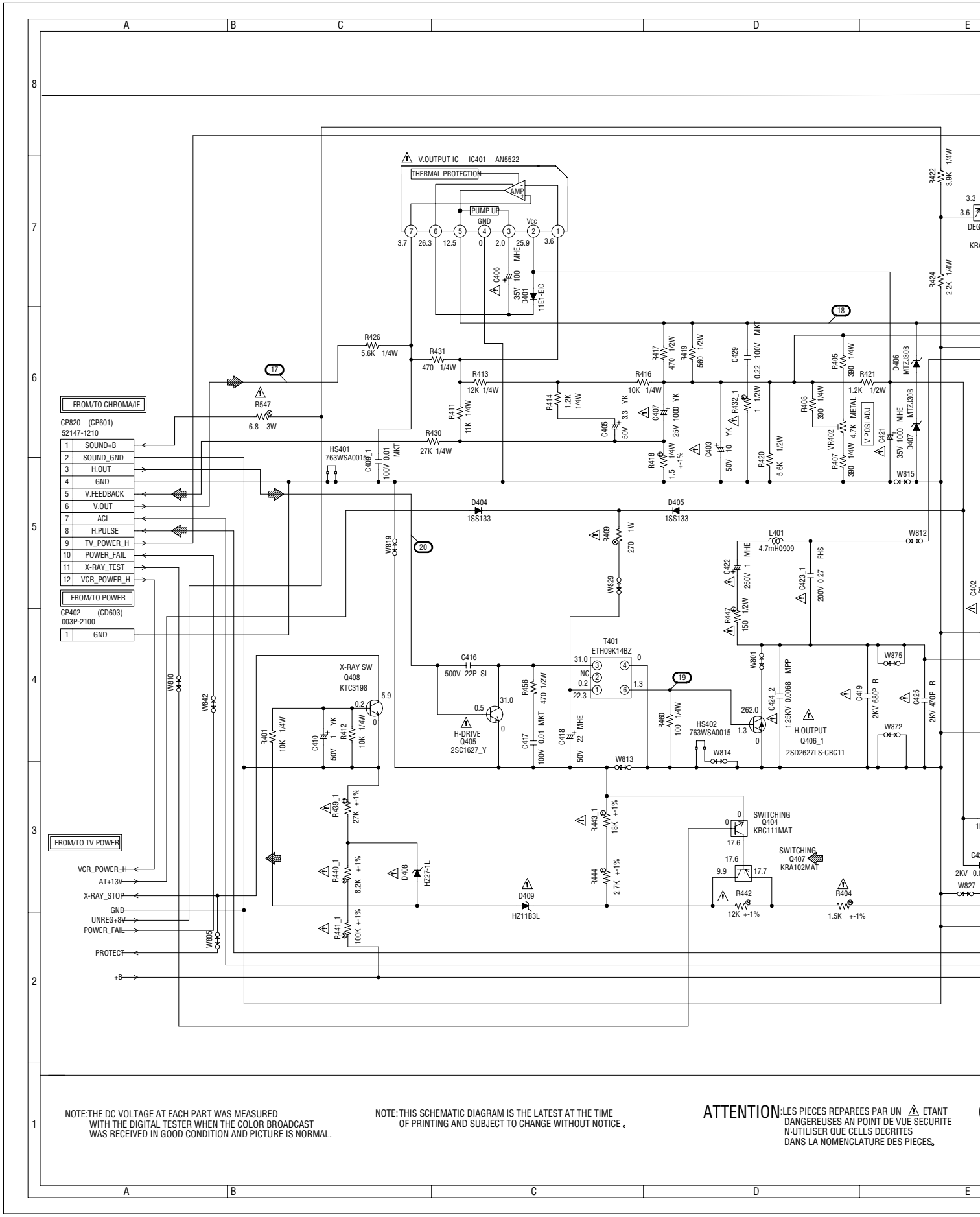
16.7. TV POWER SCHEMATIC DIAGRAM

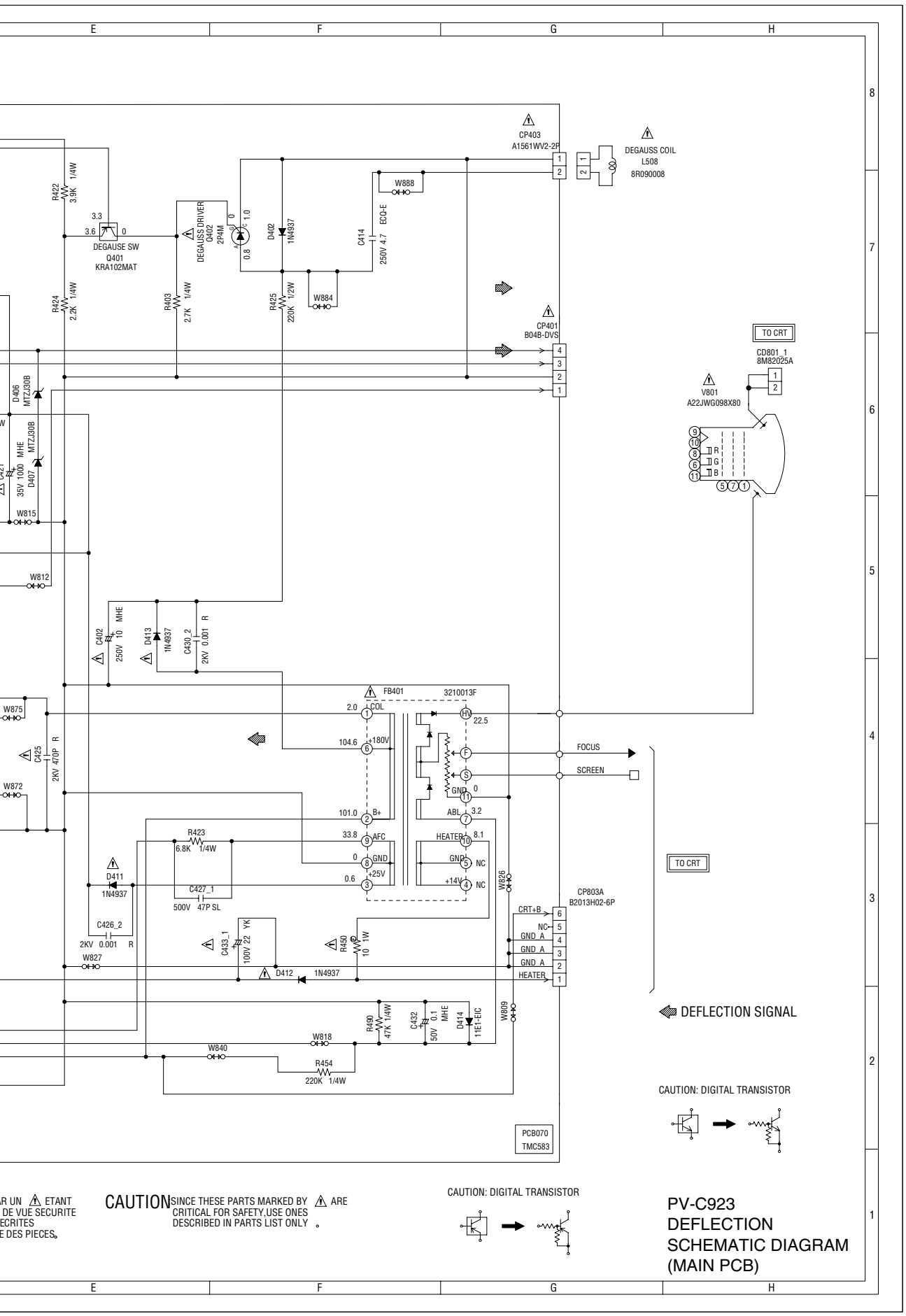



5A 125V
10A 125V
CAUTION :FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE (F501),5A 125V AND (ICP502),10A 125V.
ATTENTION :POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTOLISER QUE DES FUSIBLE DE MEME TYPE (F501),5A 125V AND (ICP502),10A 125V.
CAUTION: ICP502 ARE MANUFACTURED BY LITTELFUSE INC.,TYPE 251.
FROM/TO DEFLECTION
TO POWER
CP503 RE-H022TD-1130
CD503 JM-2BK-61
CP502 (CD810) 52147-1110
CAUTION: DIGITAL TRANSISTOR
CAUTION: DIGITAL TRANSISTOR
NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。
ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。
CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。
PCB070 TMC583

PV-C923
TV POWER SCHEMATIC DIAGRAM (MAIN PCB)

16.8. DEFLECTION SCHEMATIC DIAGRAM



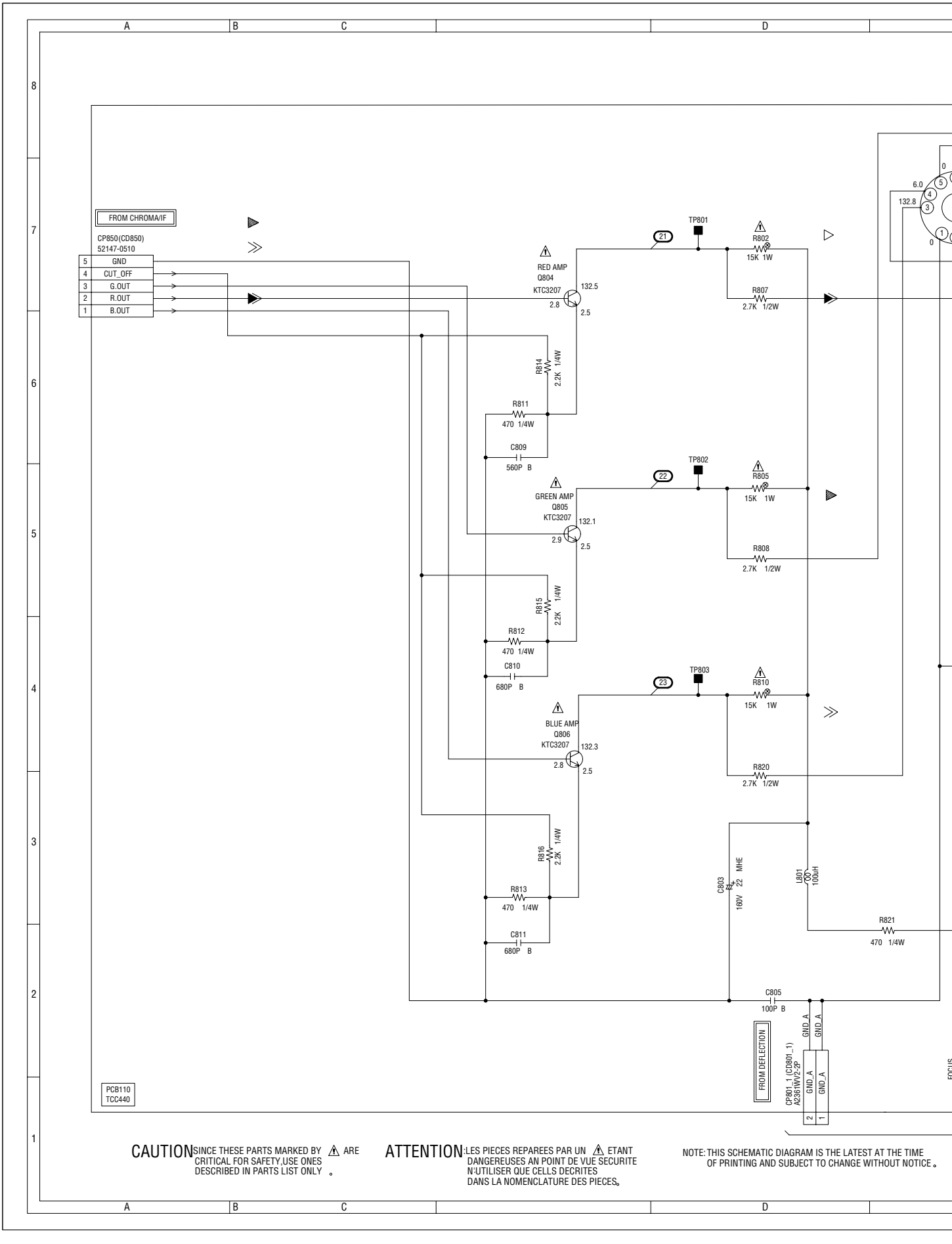


CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

CAUTION: DIGITAL TRANSISTOR

PV-C923 DEFLECTION SCHEMATIC DIAGRAM (MAIN PCB)

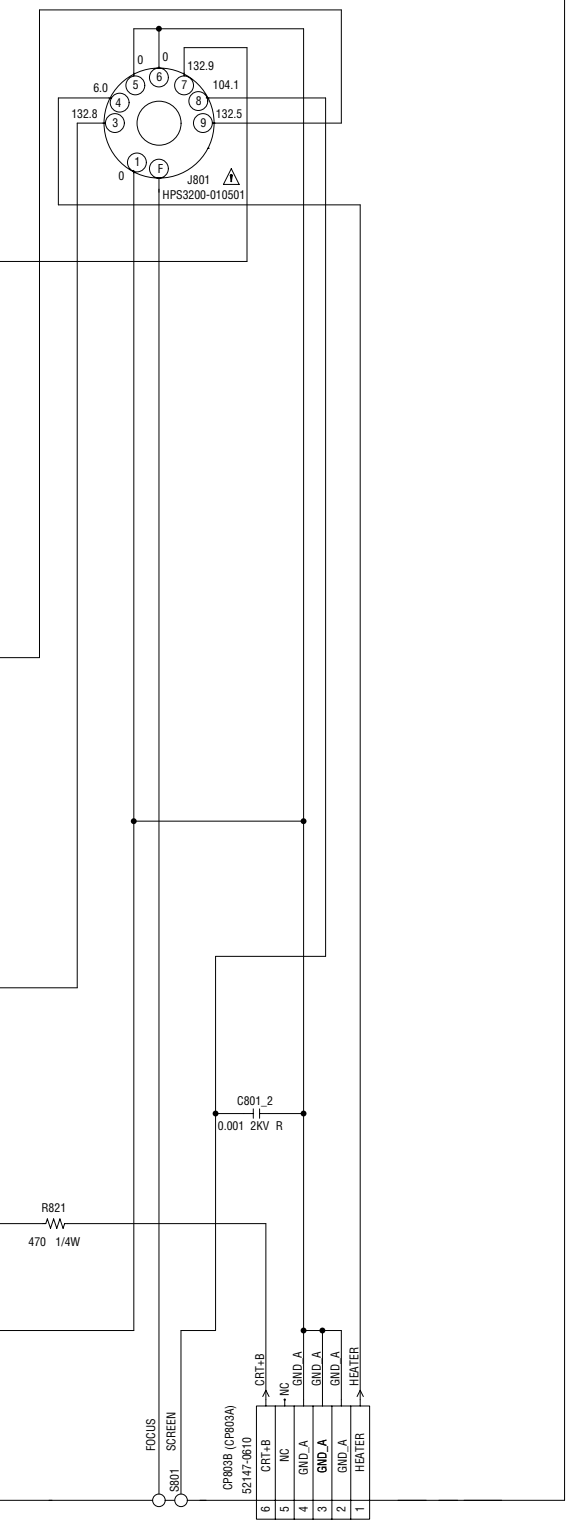
16.9. CRT SCHEMATIC DIAGRAM

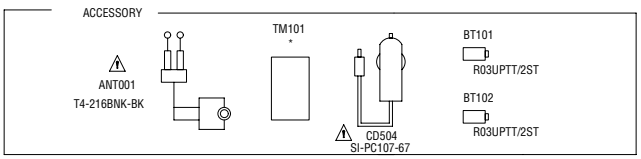


CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION :LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。





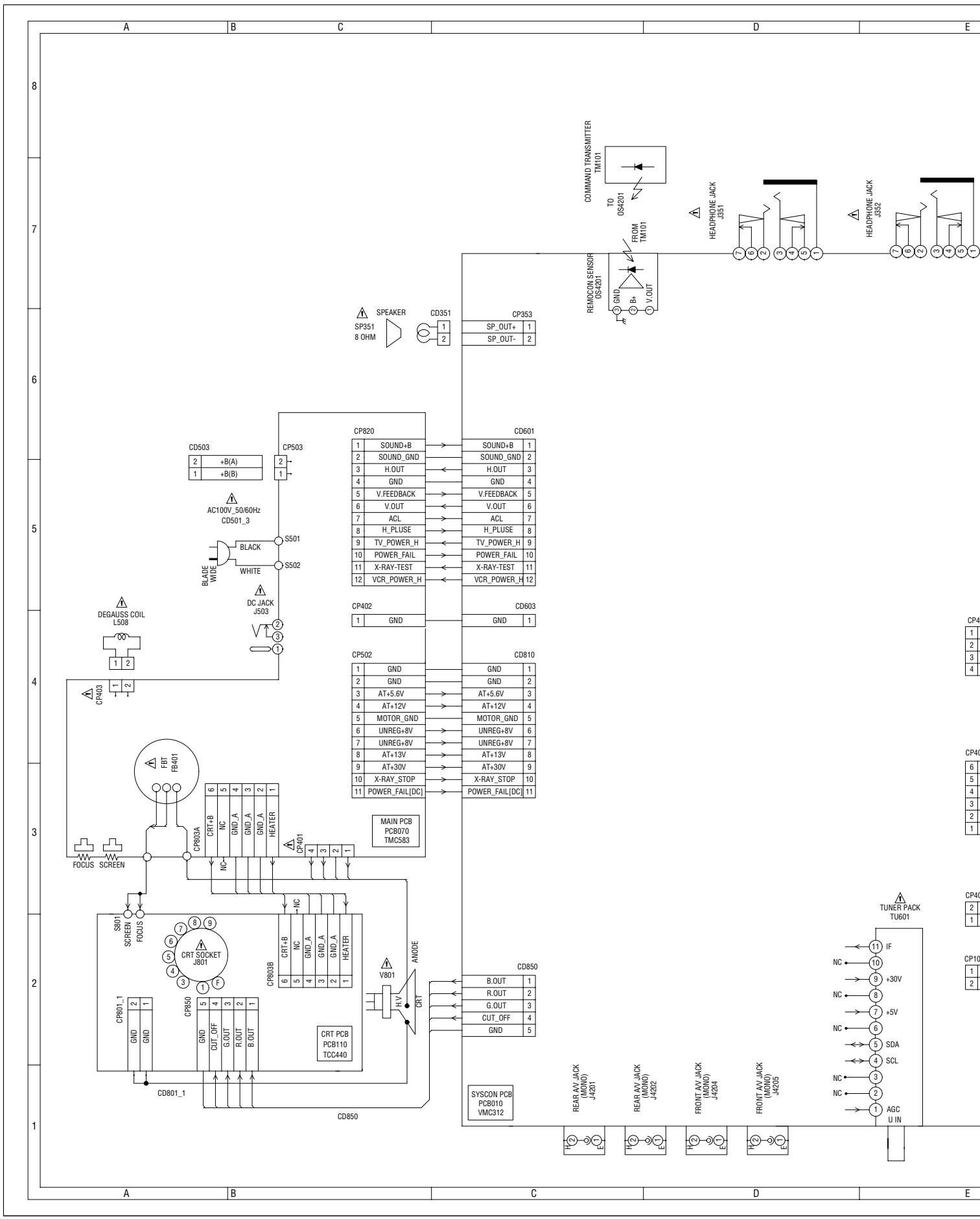
R.SIGNAL
G.SIGNAL
B.SIGNAL

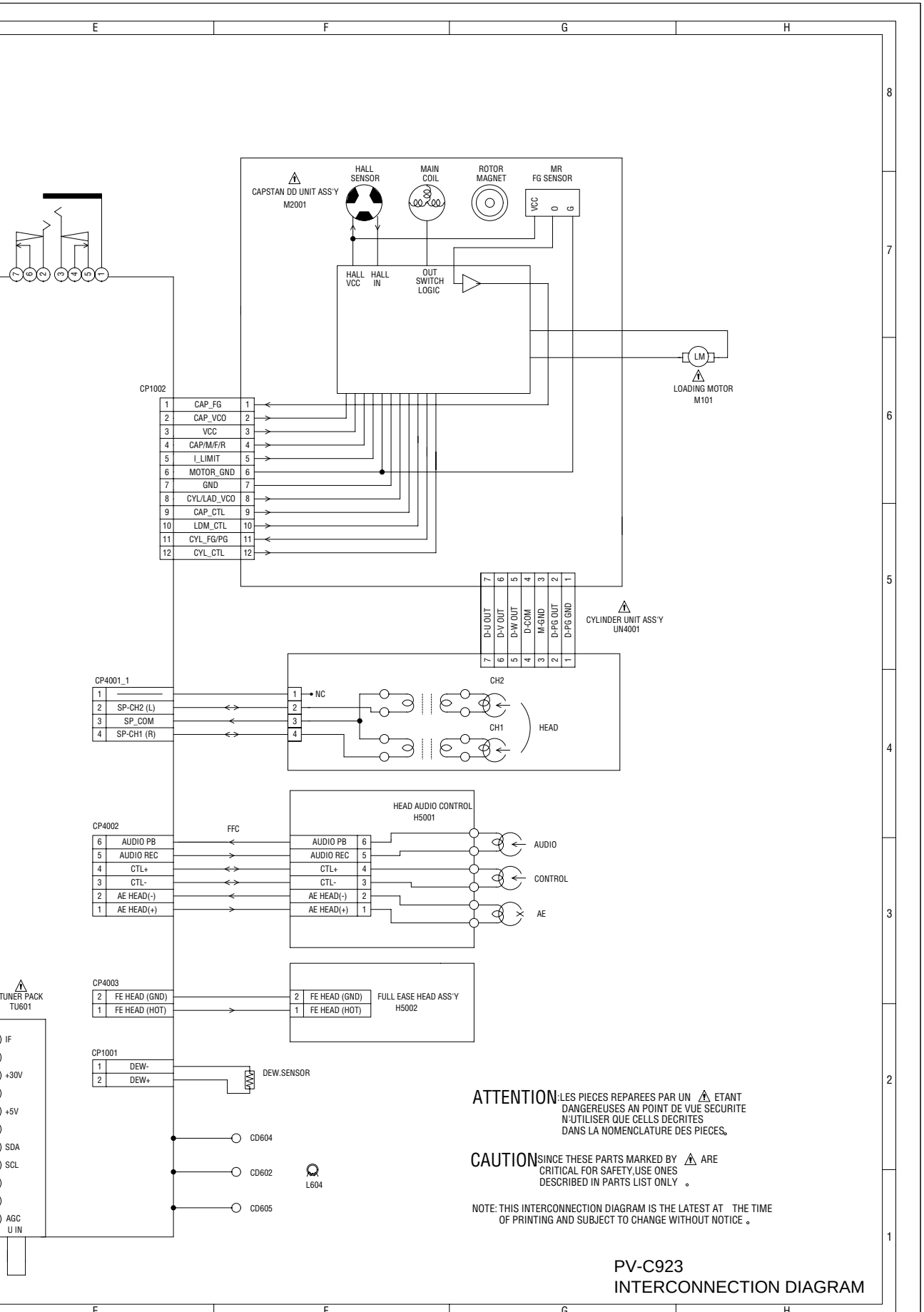
NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

TEST AT THE TIME
GE WITHOUT NOTICE。

PV-C923
CRT SCHEMATIC DIAGRAM
(CRT PCB)

16.10. INTERCONNECTION DIAGRAM





ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

PV-C923
INTERCONNECTION DIAGRAM

G-1	**TV System**	CRT	CRT Size / Visual Size		9 inch / 222.8mmV
			CRT Type		Normal
			Deflection		90 degree
			Magnetic Field BV/BH		+0.45G / 0.18G
		Color System			NTSC
		Speaker			1Speaker
			Position		Side
			Size		3 Inch
			Impedance		8 ohm
		Sound Output	MAX		1.2 W
			10%(Typical)		0.8 W
G-2	**VCR System**	System			VHS Player / Recorder
		Video System			NTSC
		Hi-Fi STEREO			No
		NTSC PB			-
		Deck	DECK		OVD-7
			Loading System		Front
			Motor		3
		Heads	Video Head		2 Head
			FM Audio Head		No
			Audio /Control		Mono/Yes
			Erase(Full Track Erase)		Yes
		Tape Speed	Rec PAL		-
			Rec NTSC		SP/SLP
			Play PAL		-
			Play NTSC		SP/LP/SLP
		Fast Forward / Rewind Time (Approx.) at 25oC			FF:4'50"/REW:2'30"
				with Cassette	T-120
		Forward/Reverse	NTSC or PAL-M		SP/LP/SLP=3x,5x/7x,9x/9x,15x
		Picture Search	PAL or SECAM		-
		Frame Advance			-
		Slow Speed			-
G-3	**Tuning System**	Broadcasting System			US System M
		Tuner and Receive CH	System		1Tuner
			Destination		US(w/CATV)
			Tuning System		F-Synth
			Input Impedance		VHF/UHF 75 ohm
			CH Coverage		2~69, 4A,A-5~A-1, A~I, J~W,W+1~W+84
		Intermediate Frequency	Picture(FP)		45.75MHz
			Sound(FS)		41.25MHz
			FP-FS		4.5MHz
		Preset CH			No
		Stereo/Dual TV Sound			No
		Tuner Sound Muting			Yes
G-4	**Signal**	Video Signal	Input Level		1 V p-p/75 ohm
			Output Level		1 V p-p/75 ohm
			S/N Ratio (Weighted)		50 dB
			Horizontal Resolution at SP Mode		230Lines
		Audio Signal	Input Level		-8dBm/50k ohm
			Output Level		-8dBm/ 1k ohm
			S/N Ratio at SP (Weighted)		38dB
			Harmonic Distortion at SP (1KHz)	Typical	0.015
			Frequency Response	at SP	100Hz ~10kHz
				at LP	-
				at SLP	100Hz ~4kHz
		Hi-Fi Audio Signal	Dynamic Range : More than		-
			Frequency Response		-
			Wow And Flutter : Less than		-
			Channel Separation : More than		-
			Harmonic Distortion : Less than		-
G-5	**Power**	Power Source	AC		120V 60Hz
			DC		12V
		Power Consumption	Power On	at AC	48 W at 120V 60Hz
				at DC	48 W at 12 V
			Stand by	at AC	3 W at 120V 60 Hz
				at DC	2 W at 12 V
			Per Year		-
		Protector	Power Fuse		Yes
			Dew Sensor		Yes
G-6	**Regulation**		Safety		UL
			Radiation		FCC
			X-Radiation		DHHS
G-7	**Temperature**		Operation		+5oC ~ +40oC
			Storage		-20oC ~ +60oC

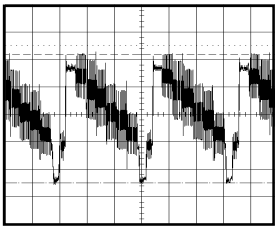
G-8	**Operating Humidity**				Less than 80% RH	
G-9	**On Screen Display**	Menu			Yes	
			Menu	Type	Character	
			Timer Rec Set		Yes	
			Channel Setup		Yes	
				TV/CATV	Yes	
				Auto ch Memory	Yes	
				Add/Delete	Yes	
				Guide ch Set		No
			TV Setup		Yes	
				V-chip Set	Yes	
				On/Off Timer Set	Yes	
				Picture	Yes	
				Audio		No
				Sap On/Off		No
			Auto Repeat On/Off		Yes	
			On/Off Timer Set			No
			System Setup		Yes	
				Clock Set	Yes	
				Language	Yes	
				Auto Clock On/Off	Yes	
				Standard Time	Yes	
				Daylight Saving Time	Yes	
		G-CODE(or SHOWVIEW or PLUSCODE)No. Entry				No
		Clock			Yes	
		CH/AV(Line)			Yes	
		Tape Counter(Linear Counter)			Yes	
		Tape Speed			Yes	
		Sleep Time			Yes	
		Stereo/Audio Output				No
				Bilingual		No
				SAP		No
		Control Level	Volume		Yes	
			Brightness / Contrast / Sharpness/Color		Yes	
			Tint		Yes	
			Bass/Treble/Balance			No
			Manual Tracking		Yes	
		Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In (Symbol Mark)			Yes	
		Auto Tracking/Manual Tracking			Yes	
		Caption / Text			Yes	
		Index				No
		Muting			Yes	
		Hi-Fi				No
		Repeat			Yes	
		Zero Return				No
		DEW			Yes	
G-10	**OSD Language**				English French Spanish	
G-11	**Clock,Timer and Timer Back-up**	Calendar			1990/1/1 ~ 2081/12/31	
		Timer Events			8 prog/ 1 month	
		One Touch Recording Max Time			5 Hours	
		OTPB Valid Time			No	
		Sleep Timer	Max Time		120	min.
			Step		10	min.
		On/Off Timer	Program(On Tim / Off Tim)		1	prog.
		Auto Shut Off	No Signal		15	min.
			No Operation		-	
		Timer Back-up (at Power Off Mode)			5	sec.

G-12	**Remote Control**	Unit		RC-GU
		Glow in Dark Remocon		No
		Format		KASEIKYO
		Custom Code		8-00h, 9-00h, 9-01h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		40 Keys
		Keys	Power	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			CH Up	Yes
			CH Down	Yes
			Volume Up	Yes
			Volume Down	Yes
			Input Select	Yes
			Play	Yes
			F.Fwd	Yes
			Rew	Yes
			Pause/Still	Yes
			Stop	Yes
			Rec/OTR	Yes
			Eject	Yes
			Counter Reset	Yes
			Speed	Yes
			Timer Rec	Yes
			Quick View(R-TUNE)	Yes
			Program	Yes
			Auto Tracking	Yes
			Set/Tracking+	Yes
			Set/Tracking-	Yes
			Menu	Yes
			Enter	Yes
			Cancel	Yes
			Call(Display)	Yes
			TV/Caption/Text(CC)	Yes
			Sleep Timer	Yes
			Mute	Yes
			Zero Return	Yes
			CM Skip	Yes
			Audio Select	No
G-13	**Features**	Auto Head Cleaning		Yes
		Auto Tracking		Yes
		HQ (VHS Standard High Quality)		Yes
		Auto Power On, Auto Play, Auto Rewind, Auto Eject		Yes
		VIDEO PLUS+(SHOWVIEW,G-CODE)		No
		Auto Clock		Yes
		Forward / Reverse Picture Search		Yes
		One Touch Playback		No
		Auto CH Memory		Yes
		Closed Caption		Yes
		TV Auto Shut off Function		Yes
		End Call		No
		Index Search		No
		SQPB		No
		CATV		Yes
		CM Skip(30sec x 6 Times)		Yes
		Comb Filter		No
		TV Monitor		No
		Program Extend		No
		Choke Coil		No
		Energy Star		Yes
		Dirty Head		No
		V-chip	USA V-chip	Yes
			CANADA V-chip	No
		Zero Return		Yes
		Power On Memory		No
		Protect of FBT Leak Circuit		Yes

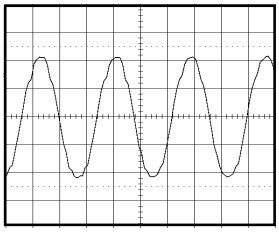
G-14	**Accessories**	Owner's Manual		Language	English
				w/Guarantee Card	Yes
		Remote Control Unit			Yes
		Rod Antenna			Yes
				Poles	2pole
				Terminal	F type
				w/300 ohm to 75 ohm Antenna Adapter	Yes
		Loop Antenna			No
				Terminal	-
		U/V Mixer			No
		DC Car Cord (Center+)			Yes
		Guarantee Card			No
		Warning Sheet			No
		Circuit Diagram			No
		Antenna Change Plug			No
		Service Facility List			No
		Columbia Offer Sheet			No
		Tent Card			No
		Important Safeguard			No
		Dew/AHC Caution Sheet			No
		AC Plug Adapter			No
		Quick Set-up Sheet			No
		Battery			Yes
				UM size x pcs	UM-4 x 2 pcs
				OEM Brand	Yes(Panasonic)
		AC Cord			No
		AV Cord (2Pin-1Pin)			No
		Registration Card			Yes
		Owner Information Card (MATSUSHITA Only)			Yes
		ESP Card			No
		300 ohm to 75 ohm Antenna Adapter			No
G-15	**Interface**	Switch		Power	Yes
				Play	Yes
				Pause/Still	No
				System Select	No
				One Touch Playback	No
				Channel Up	Yes
				Channel Down	Yes
				F.FWD/Cue	Yes
				Eject/Stop	Yes
				Main Power SW	No
				Volume Up	Yes
				Volume Down	Yes
				Rew/Rev	Yes
				Rec/OTR	Yes
				Input Select	No
		Indicator		Power	Yes (Red)
				Rec/OTR	Yes (Red)
				T-Rec	Yes (Red)
				On Timer	No
				CS	No
		Key Light up		Rec/OTR	No
				One Touch Playback	No
				Play	No
		Terminals	Front	Video Input	RCAx1
				Audio Input	RCAx1
				Other Terminal	Headphone(Stereo & Mono, 3.5mm) x 2
			Rear	Video Input	RCAx1
				Audio Input	RCAx1
				Video Output	RCAx1
				Audio Output	RCAx1
				Euro Scart	No
				Diversity	No
				Ext Speaker	No
				DC Jack 12V(Center +)	Yes
				VHF/UHF Antenna Input	F Type
				AC Inlet	No
G-16	**Set Size**			Approx. W x D x H (mm)	278 x 312.5 x 311.5
G-17	**Weight**			Net (Approx.)	8.8 kg (19.4 lbs)
				Gross (Approx.)	10.5 kg (23.1 lbs)

G-18	Carton	Master Carton		No
			Content	-
			Material	-
			Dimensions W x D x H(mm)	-
			Description of Origin	-
		Gift Box		Yes
			Material	Double/Brown
			Dimensions W x D x H(mm)	338 x 381 x 386
			Design	As per Buyer's
			Description of Origin	Yes
		Drop Test	Natural Dropping At	1 Corner / 3 Edges / 6 Surfaces
			Height (cm)	62
		Container Stuffing(40' container)		1260 Sets
G-19	Material	Cabinet	Front	PS 94V0 DECABROM
			Rear	PS 94V0 DECABROM
			Jack Panel	PS 94V0 DECABROM
		PCB	Non-Halogen Demand	No
			Eyelet Demand	Yes
G-20	Environment	Pb Free	Lead-free Solder	Yes
			Other	No
		Cd Free		No

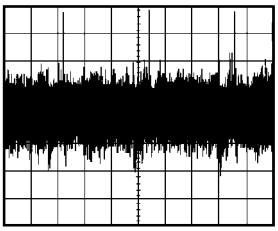
Y/C/AUDIO/HEAD AMP



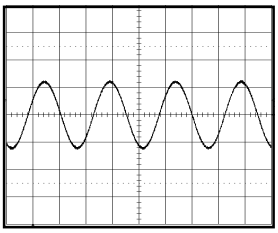
① PB
0.5V 20µs/div



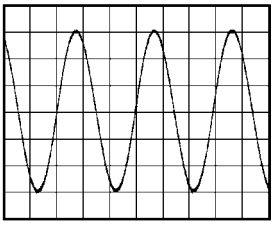
② POWER ON
100mV 0.1µs/div



③ PB
10mV 20us/div

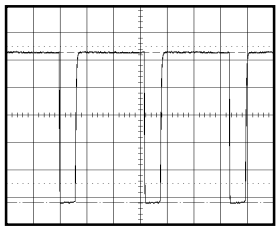


④ PB
0.5V 1ms/div

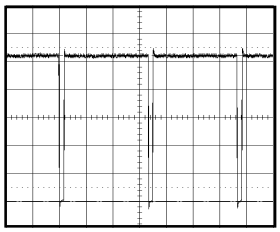


⑤ REC
10.0V 5us/div

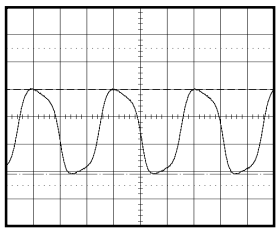
MICON



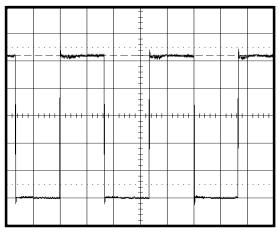
⑥ POWER ON
1.0V 20µs/div



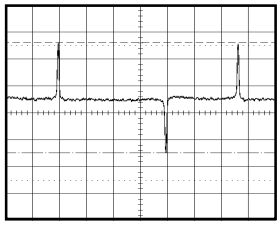
⑦ POWER ON
0.5V 10ms/div



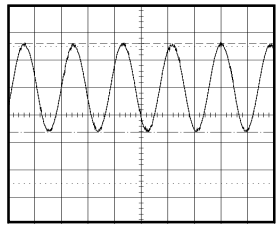
⑧ POWER ON
1.0V 10µs/div



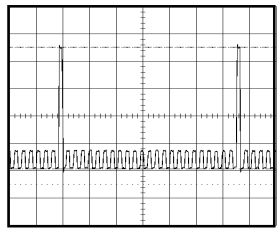
⑨ PB
1.0V 10ms/div



⑩ PB
1.0V 5ms/div

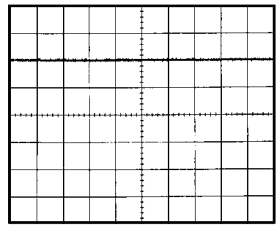


⑪ PB
0.5V 0.5ms/div

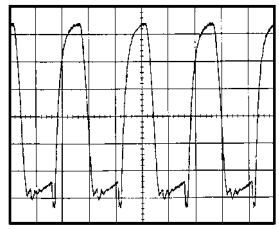


⑬ PB
1.0V 5ms/div

TV POWER

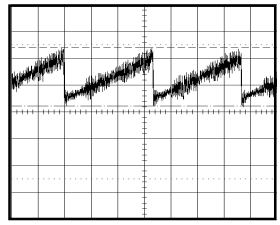


⑮ 5.0V 20ms/div



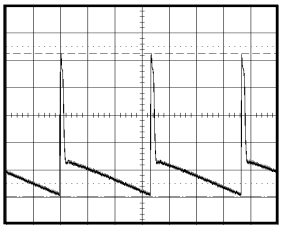
⑯ 500mV 5µs/div

DEFLECTION

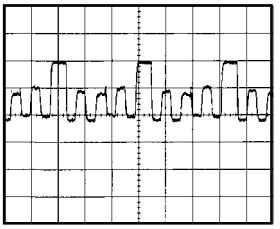


⑰ 0.5V 5ms/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

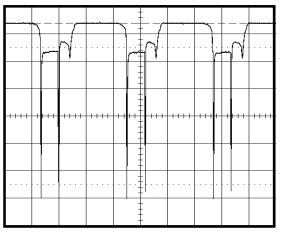


⑱ 10.0V 5ms/div

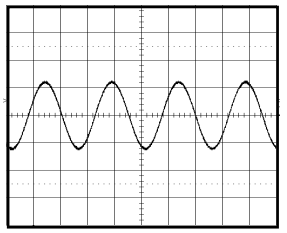


㉓ 50.0V 20µs/div

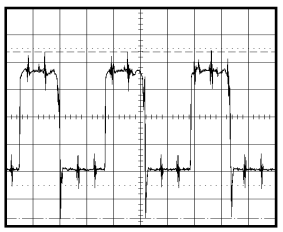
IN/OUT



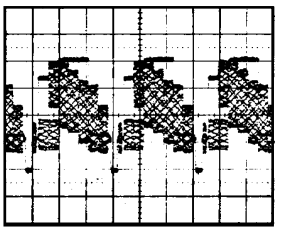
⑲ 2.0V 20µs/div



㉔ PB
0.5V 1ms/div

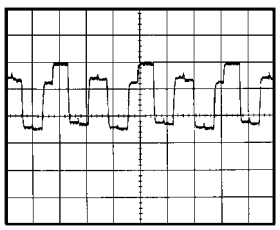


⑳ 200mV 20µs/div



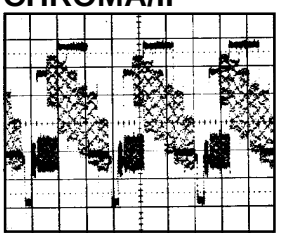
㉕ 0.5V 20µs/div

CRT

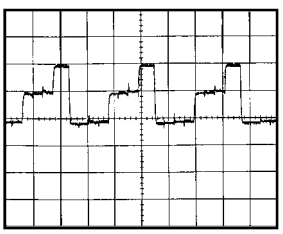


㉑ 50.0V 20µs/div

CHROMA/IF

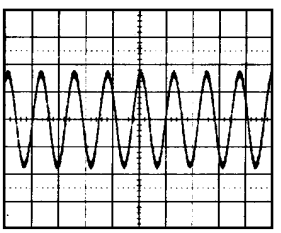


㉖ 200mV 20µs/div



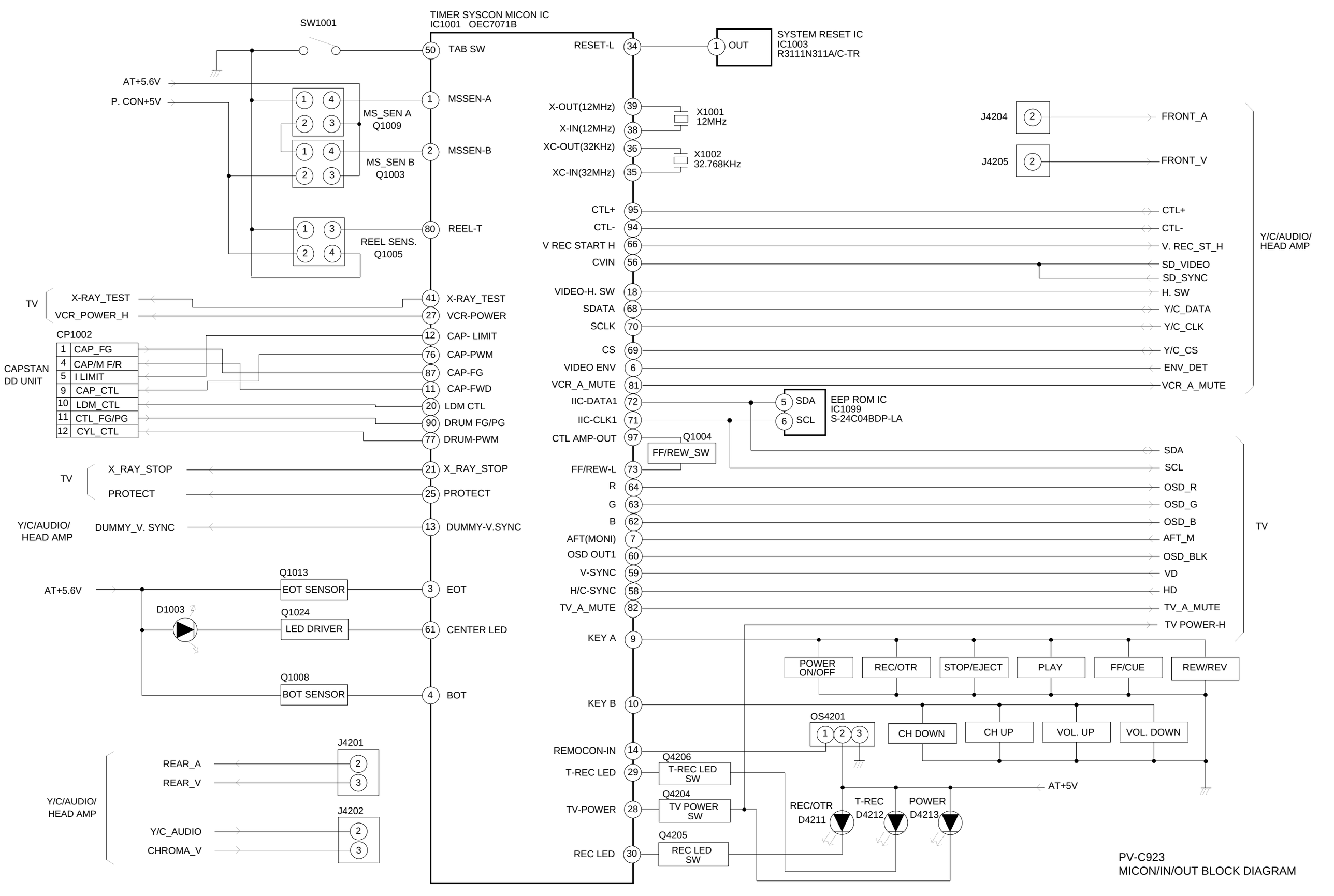
㉒ 50.0V 20µs/div

SOUND AMP

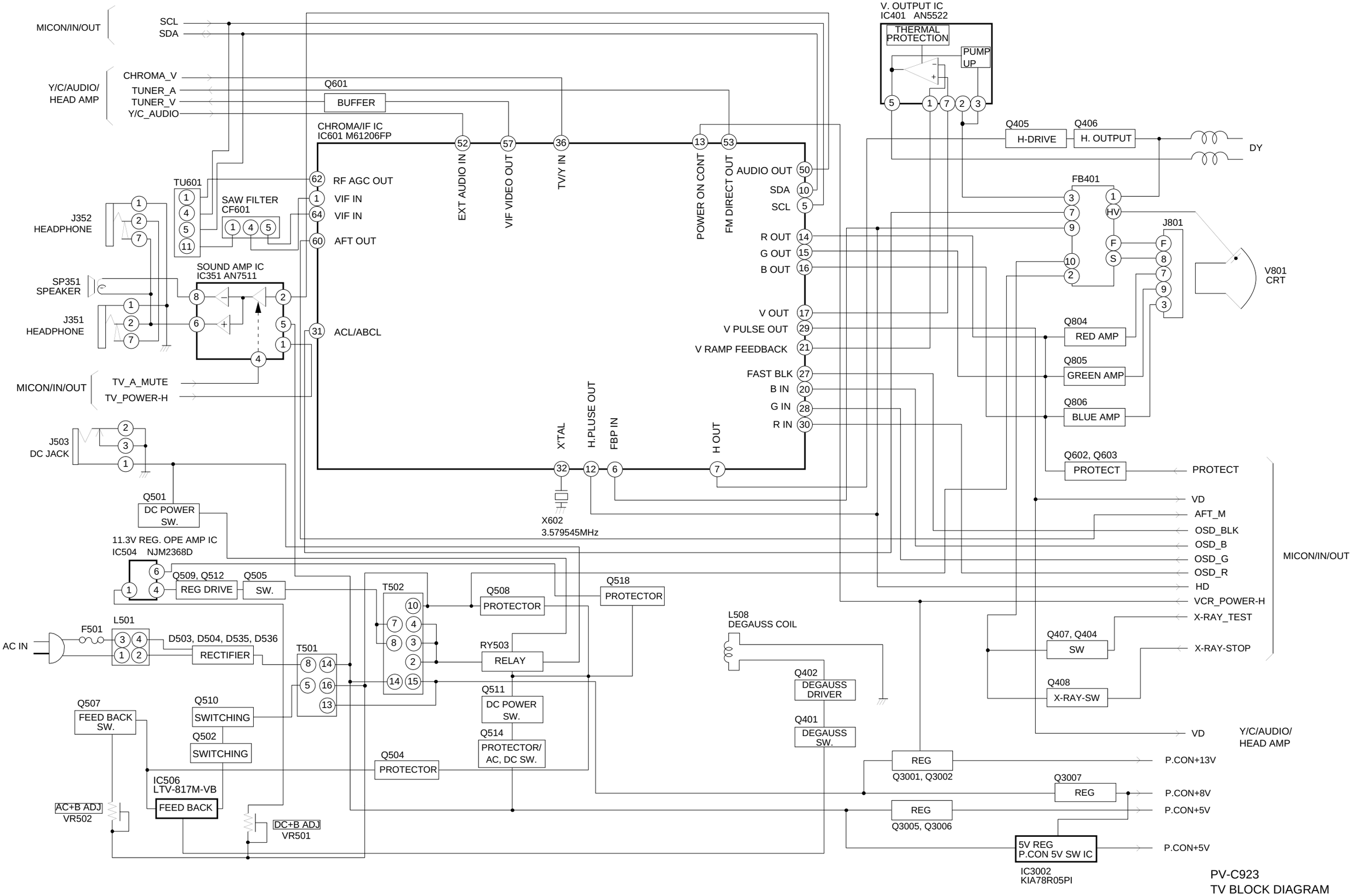


㉗ 200mV 2ms/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.



PV-C923
MICON/IN/OUT BLOCK DIAGRAM



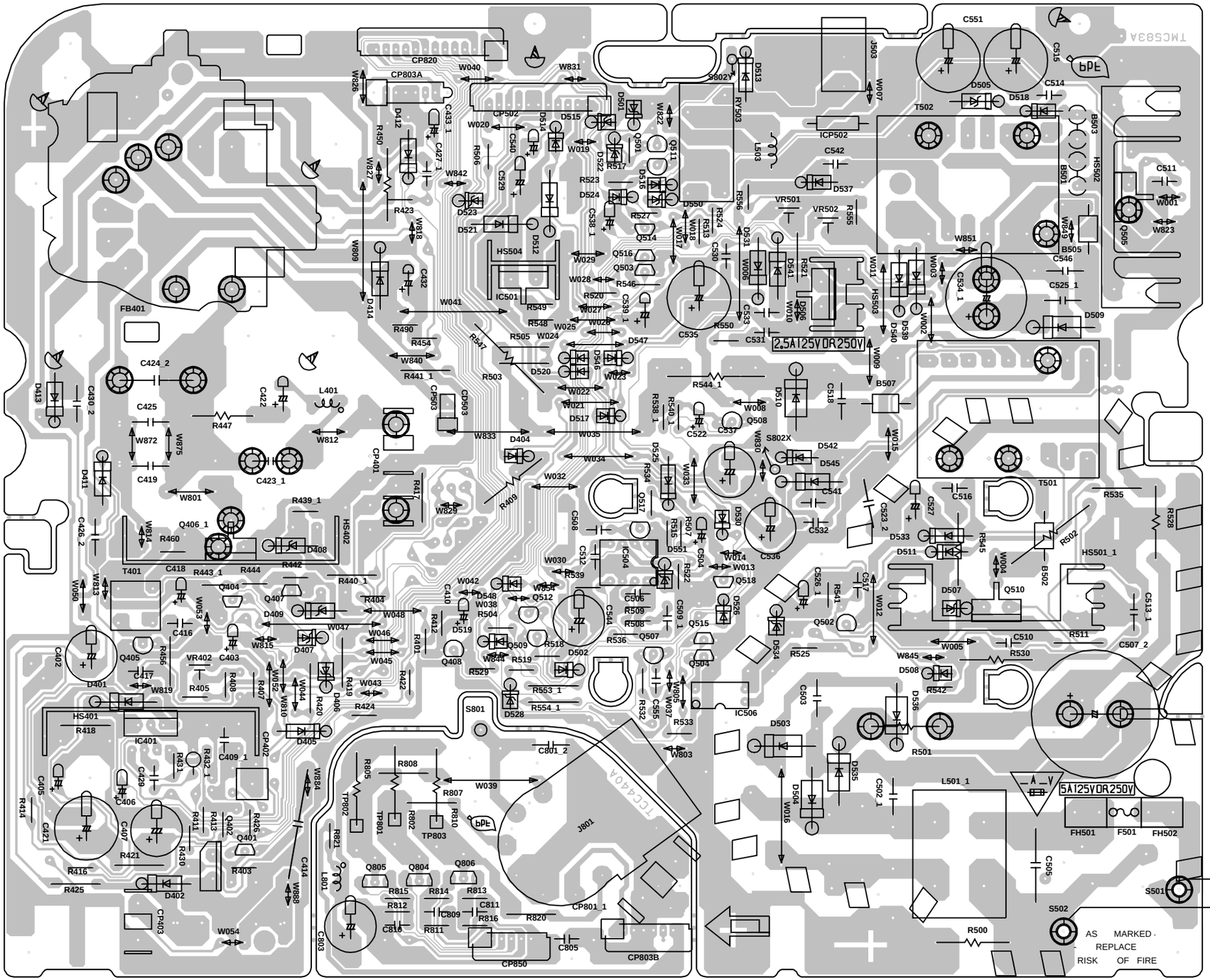
PV-C923
TV BLOCK DIAGRAM

X4001
3.579545MHz
Q4012
BUFFER
Q4010
BUFFER
Y/C/AUDIO/HEAD AMP IC
IC4501
LA71205M-MPB
50
49
41
39
37
VX01
PULL
OUT
TIMMING
DRIVER
CCD
CLAMP
SERIAL
DECODER
55
54
53
Y/C_CS
Y/C_DATA
Y/C_CLK
MICON/IN/OUT
NC 67
NC 66
H.SW
REC
FM-EQ
FM
MOD
WC
DC
NL
EMPHA
DETAL
ENH
AGC
AMP
KIL
C-LPF
V/I
CONV
CLAMP
22
Y-LPF
21
CP4001
1
2 SP-CM2 (L)
3 SP_COM
4 SP-CH1 (R)
CYL
65
72
73
74
H.AMP
SW
GCA
B-UP
AMP
Main
CONV
3.58M
BPF2
YNR/
COMB
VCA
36
CLAMP
34
FM
AGC
ACC
AMP
3.58M
BPF1
N.L.
DEEM
DELAY
KIL
B.D.
PB
AMP
NC1
H.AMP SW/
AUDIO
MUTE
58
VCR_A_MUTE
PB
FM-EQ
Y/C MIX
1/2
C ROT
RF SW IN
57
H. SW
PB
PHASE-EQ
DOUBLE
LIM
FM
DEM
SUB
LPF
FBC
9
REC AMP
LINE
AMP
V-AGC
ENV DET
59
ENV. DET
7
LPF
Chara
INS.
CHROMA_V
8
AUTO BIAS
ALC
DET
ALC
24
DUMMY_V. SYNC
SD_VIDEO
6
PB.EE
EQ
AMP
MUTE
SYNC
SEP
6dB
26
SD_SYNC
Q4009
BUFFER
Q4011
AMP
11
5
4
3
2
10
80
78
76
32
30
28
25
Q4007
SNYC IN
CP4003
FE HEAD
1 FE HEAD (HOT)
2 FE HEAD (GND)
CP4002
HEAD
AUDIO
CONTROL
5 AUDIO REC
6 AUDIO PB
4 CTL+
3 CTL-
2 AE HEAD(-)
1 AE HEAD(+)
COIL, BIAS OSC
L4001
Q4005
BIAS CTL
Q4006
BIAS OSC
L4007
15.6KHz
TRAP
CHROMA_V
TUNER_V
TUNER_A
VD
Y/C_AUDIO
Y/C_AUDIO
FRONT_V
REAR_V
FRONT_A
REAR-A
V.REC_ST_H
CTL+
CTL-
TV
MICON/IN/OUT
Q4001, Q4002
AUDIO PB SW
Q4003
SW

PV-C923
Y/C/AUDIO/HEAD AMP BLOCK DIAGRAM

A	**A/C**	:	Audio/Control
	ACC	:	Automatic Color Control
	AE	:	Audio Erase
	AFC	:	Automatic Frequency Control
	AFT	:	Automatic Fine Tuning
	AFT DET	:	Automatic Fine Tuning Detect
	AGC	:	Automatic Gain Control
	AMP	:	Amplifier
	ANT	:	Antenna
	A.PB	:	Audio Playback
	APC	:	Automatic Phase Control
	ASS'Y	:	Assembly
	AT	:	All Time
	AUTO	:	Automatic
	A/V	:	Audio/Video
B	**BGP**	:	Burst Gate Pulse
	BOT	:	Beginning of Tape
	BPF	:	Bandpass Filter
	BRAKE SOL	:	Brake Solenoid
	BUFF	:	Buffer
	B/W	:	Black and White
C	**C**	:	Capacitance, Collector
	CASE	:	Cassette
	CAP	:	Capstan
	CARR	:	Carrier
	CH	:	Channel
	CLK	:	Clock
	CLOCK (SY-SE)	:	Clock (Syscon to Servo)
	COMB	:	Combination, Comb Filter
	CONV	:	Converter
	CPM	:	Capstan Motor
	CTL	:	Control
	CYL	:	Cylinder
	CYL-M	:	Cylinder-Motor
	CYL SENS	:	Cylinder-Sensor
D	**DATA (SY-CE)**	:	Data (Syscon to Servo)
	dB	:	Decibel
	DC	:	Direct Current
	DD Unit	:	Direct Drive Motor Unit
	DEMOD	:	Demodulator
	DET	:	Detector
	DEV	:	Deviation
E	**E**	:	Emitter
	EF	:	Emitter Follower
	EMPH	:	Emphasis
	ENC	:	Encoder
	ENV	:	Envelope
	EOT	:	End of Tape
	EQ	:	Equalizer
	EXT	:	External
F	**F**	:	Fuse
	FBC	:	Feed Back Clamp
	FE	:	Full Erase
	FF	:	Fast Forward, Flipflop
	FG	:	Frequency Generator
	FL SW	:	Front Loading Switch
	FM	:	Frequency Modulation
	FSC	:	Frequency Sub Carrier
	FWD	:	Forward
G	**GEN**	:	Generator
	GND	:	Ground
H	**H.P.F**	:	High Pass Filter
	H.SW	:	Head Switch
	Hz	:	Hertz
I	**IC**	:	Integrated Circuit
	IF	:	Intermediate Frequency
	IND	:	Indicator
	INV	:	Inverter
K	**KIL**	:	Killer
L	**L**	:	Left
	LED	:	Light Emitting Diode
	LIMIT AMP	:	Limiter Amplifier
	LM, LDM	:	Loading Motor
	LP	:	Long Play
	L.P.F	:	Low Pass Filter
	LUMI.	:	Luminance
M	**M**	:	Motor
	MAX	:	Maximum
	MINI	:	Minimum
	MIX	:	Mixer, mixing
	MM	:	Monostable Multivibrator
	MOD	:	Modulator, Modulation
	MPX	:	Multiplexer, Multiplex
	MS SW	:	Mecha State Switch
N	**NC**	:	Non Connection
	NR	:	Noise Reduction
O	**OSC**	:	Oscillator
	OPE	:	Operation
P	**PB**	:	Playback
	PB CTL	:	Playback Control
	PB-C	:	Playback-Chrominance
	PB-Y	:	Playback-Luminance
	PCB	:	Printed Circuit Board
	P. CON	:	Power Control
	PD	:	Phase Detector
	PG	:	Pulse Generator
	P-P	:	Peak-to Peak
R	**R**	:	Right
	REC	:	Recording
	REC-C	:	Recording-Chrominance
	REC-Y	:	Recording-Luminance
	REEL BRK	:	Reel Brake
	REEL S	:	Reel Sensor
	REF	:	Reference
	REG	:	Regulated, Regulator
	REW	:	Rewind
	REV, RVS	:	Reverse
	RF	:	Radio Frequency
	RMC	:	Remote Control
	RY	:	Relay
S	**S. CLK**	:	Serial Clock
	S. COM	:	Sensor Common
	S. DATA	:	Serial Data
	SEG	:	Segment
	SEL	:	Select, Selector
	SENS	:	Sensor
	SER	:	Search Mode
	SI	:	Serial Input
	SIF	:	Sound Intermediate Frequency
	SO	:	Serial Output
	SOL	:	Solenoid
	SP	:	Standard Play
	STB	:	Serial Strobe
	SW	:	Switch

S	**SYNC**	:	Synchronization
	SYNC SEP	:	Sync Separator, Separation
T	**TR**	:	Transistor
	TRAC	:	Tracking
	TRICK PB	:	Trick Playback
	TP	:	Test Point
U	**UNREG**	:	Unregulated
V	**V**	:	Volt
	VCO	:	Voltage Controlled Oscillator
	VIF	:	Video Intermediate Frequency
	VP	:	Vertical Pulse, Voltage Display
	V.PB	:	Video Playback
	VR	:	Variable Resistor
	V.REC	:	Video Recording
	VSF	:	Visual Search Fast Forward
	VSR	:	Visual Search Rewind
	VSS	:	Voltage Super Source
	V-SYNC	:	Vertical-Synchronization
	VT	:	Voltage Tuning
X	**X'TAL**	:	Crystal
Y	**Y/C**	:	Luminance/Chrominance



PV-C923
MAIN/CRT P.C.B.